



2071.0.55.001 - Census of Population and Housing: Commuting to Work - More Stories from the Census, 2016

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Summary

Commuting Distance for Australia

COMMUTING DISTANCE FOR AUSTRALIA

INTRODUCTION

The Place of Usual Residence (the area where a person usually lives) and Place of Work (the area where a person usually works) of employed people over the age of 15 years were collected in the 2016 Census of Population and Housing. The distance between these two locations represents commuting distance on the journey to work. The ABS has calculated data on commuting distances based on the assumption that a person has followed the shortest road network path, or where this was not possible a straight line distance, with no stops when commuting to work. This data can inform policy and research around the commuting behaviours of Australians and highlight differences across the country in the design and sustainability of towns and cities.

Accompanying this data are Interactive Maps that have been created to visualise the commuting distances of employed Australians by Statistical Area Level 2 (SA2s). SA2s are medium-sized general purpose areas, which represent a community that interacts together both socially and economically. The maps can be viewed from Interactive Maps - Commuting Distance, just use a keyword area like 'Melbourne' to get started:

- **Commuting Distance from Place of Usual Residence**
- **Commuting Distance to Place of Work**

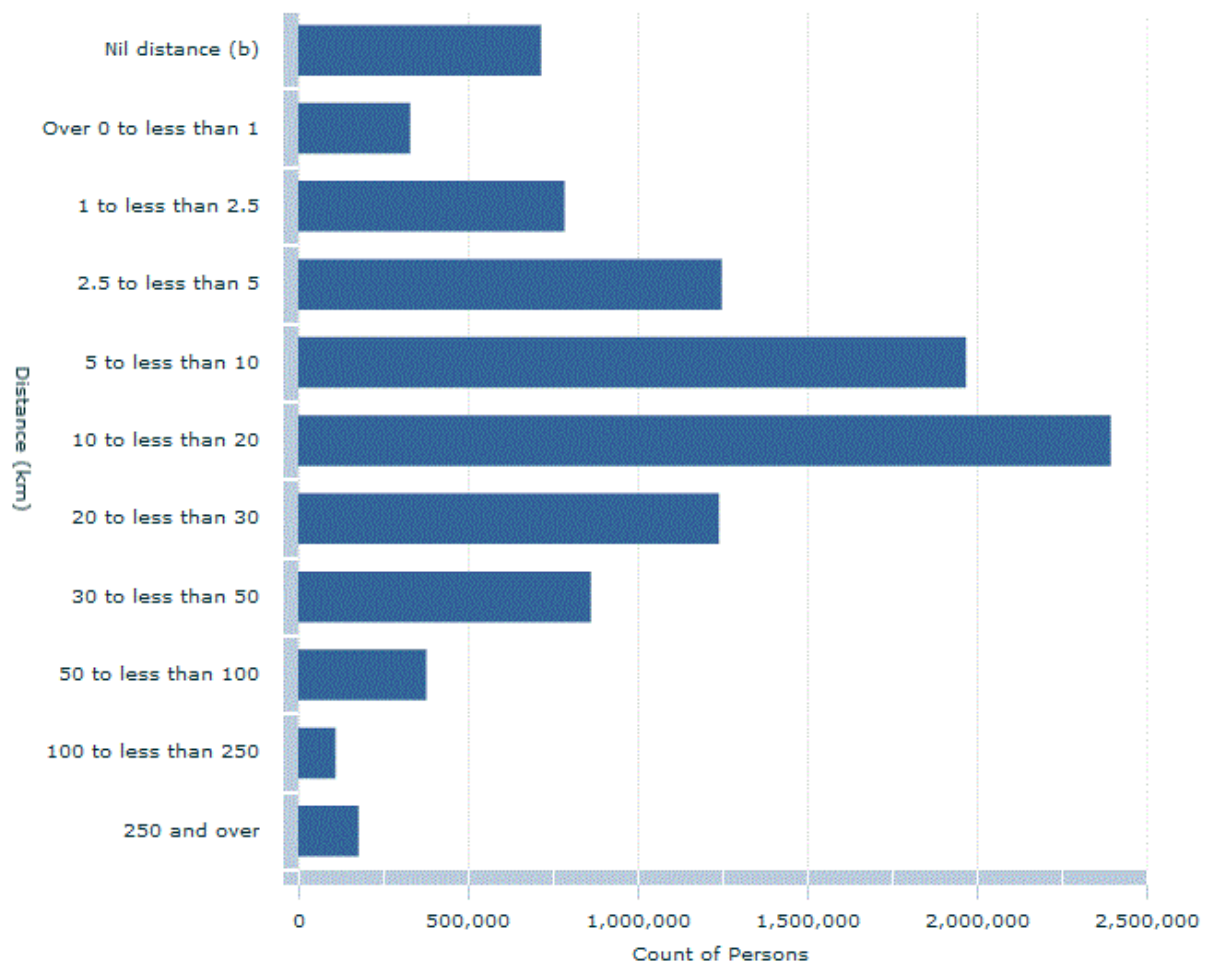
This article has focused on the concept of 'everyday commutes' and as such data on average commuting distances has only included commutes less than 250 kilometres (km). This threshold is considered a likely maximum distance for a daily commute and has been based on previous analysis conducted by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) in the Australia's commuting distance: cities and regions paper.

More information on the methodology for calculating distance to work can be found in the **Explanatory Notes** tab at the top of this page.

AVERAGE DISTANCE FROM PLACE OF USUAL RESIDENCE

This section of the article explores the distance people travel to work based on the area where they live. In Australia, the average commuting distance people travelled from their place of usual residence was 16.0 kilometres (km). Around 7.4 million people (or 73% of employed people over the age of 15 years) commuted a distance of less than 20 km to work.

Distribution of persons, distance to work, Australia, 2016(a)



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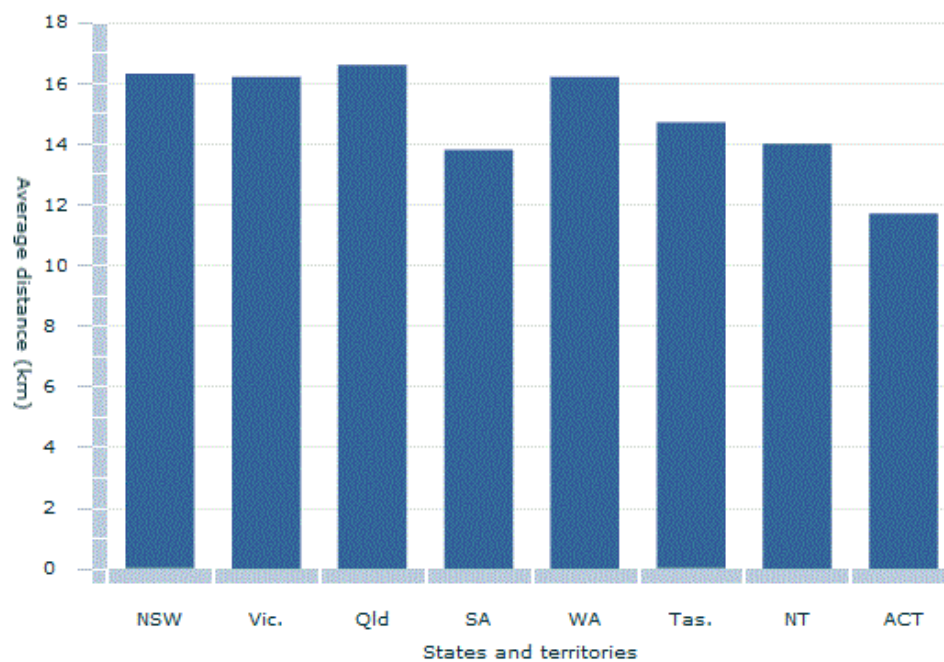
Footnote(s): (a) Includes Other Territories. (b) Nil distance includes some persons who worked from home or did not go to work.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance from usual residence for states and territories, capital cities and rest of state

Residents in Queensland had the longest average commuting distance (16.6 km), followed by New South Wales (16.3 km). Those in the Australian Capital Territory had the shortest average commute (11.7 km), which is likely due in part to its small land area compared with the other states and territories.

Average distances from usual residence, state & territory(a)(b), 2016



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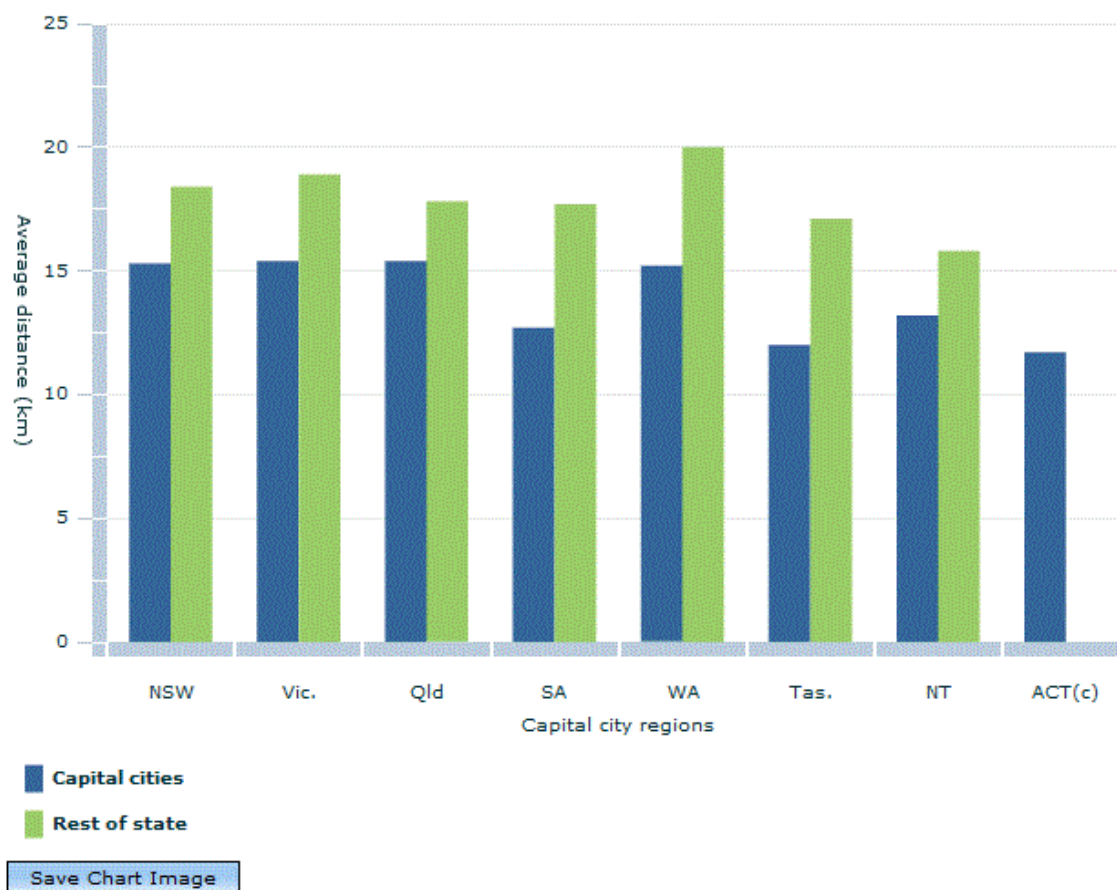
Footnote(s): (a) Excludes Other Territories. (b) Excludes people who travelled 250 km or more.

Source(s): ABS Census of Population and Housing, 2016

The capital cities with the largest populations generally had longer average commuting distances. Residents in Brisbane, Melbourne and Sydney all averaged around 15.4 km, while those living in the Australian Capital Territory had the shortest average commutes with 11.7 km.

Residents living outside capital cities (called rest of state) generally had longer average commutes when compared to residents living in their corresponding capital cities, with people outside of Perth in Western Australia commuting the longest average distance in Australia (20.0 km).

Average distances from usual residence, Greater Capital City Statistical Areas (GCCSA), 2016(a)(b)



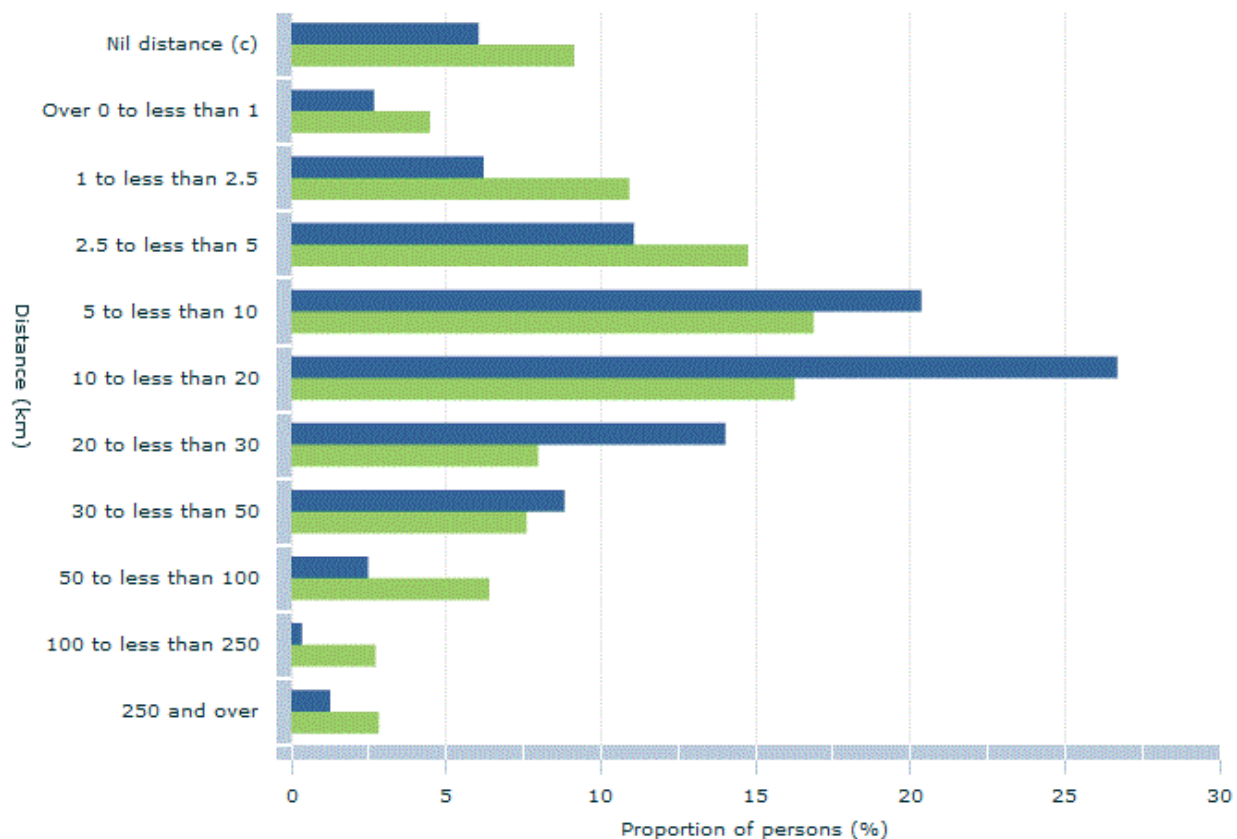
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Footnote(s): (a) Excludes Other Territories. (b) Excludes people who travelled 250 km or more. (c) The Australian Capital Territory does not have a corresponding Rest of State.

Source(s): ABS Census of Population and Housing, 2016

Distribution of persons in capital cities(a) & rest of state, Greater Capital City Statistical Areas (GCCSA), 2016(b)



Capital cities(a)

Rest of state

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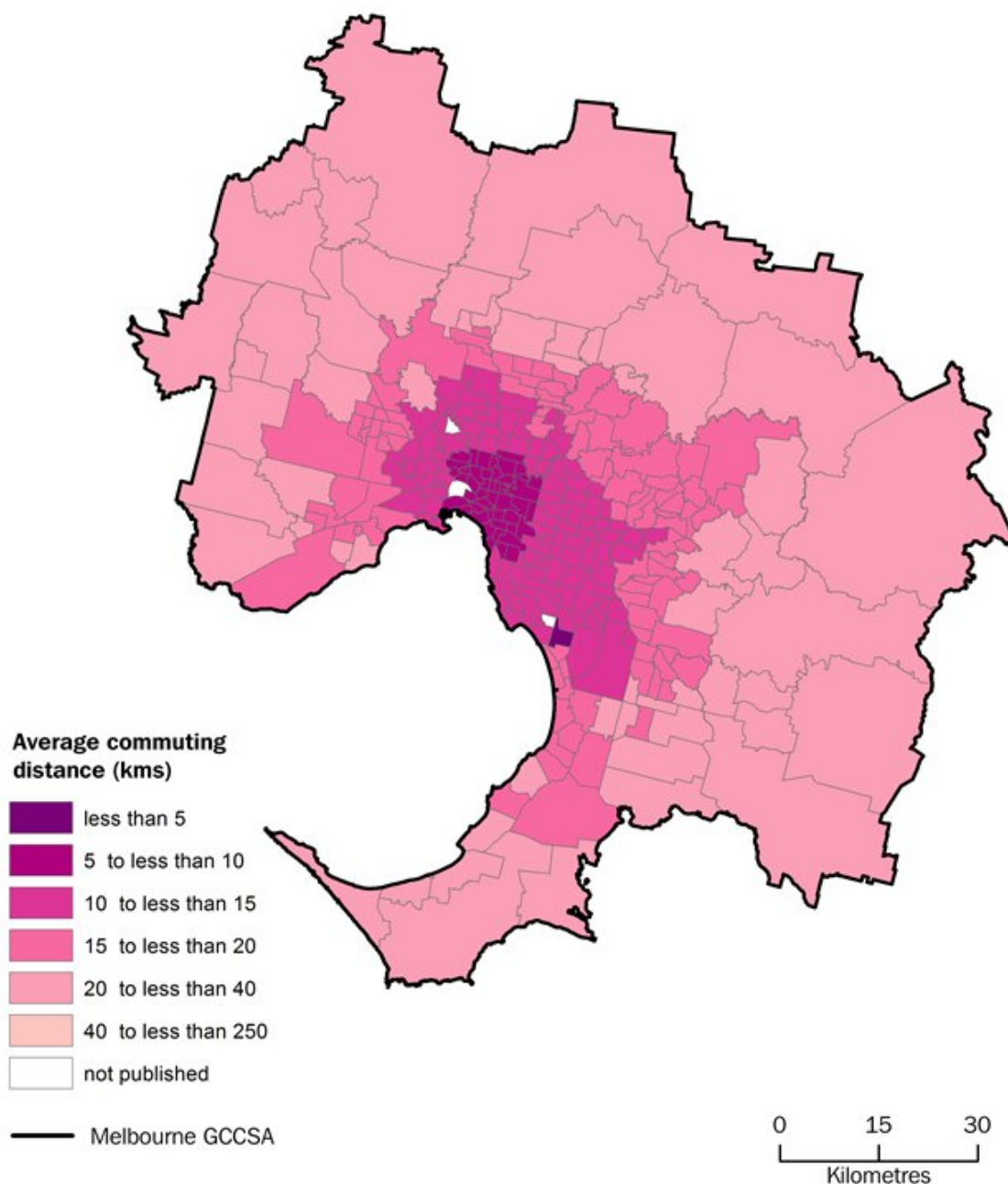
Footnote(s): (a) Capital cities includes Australian Capital Territory. (b) Excludes Other Territories. (c) Nil distance includes some persons who worked from home or did not go to work.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance from usual residence for Statistical Area Level 2

At a SA2 level, the average commuting distance generally increased the further a region was from a central business district or major/regional town hub. Within all Australian capital cities, for example Greater Melbourne shown in Map 1, there is a clear pattern of inner, middle and outer rings of SA2s based on average commuting distance. The inner ring generally had the shortest average distances (less than 10 km), which contain the city centres as well as the surrounding suburbs. This was followed by a middle ring (10 to 15 km) and an outer ring of SA2s (15 to 20 km).

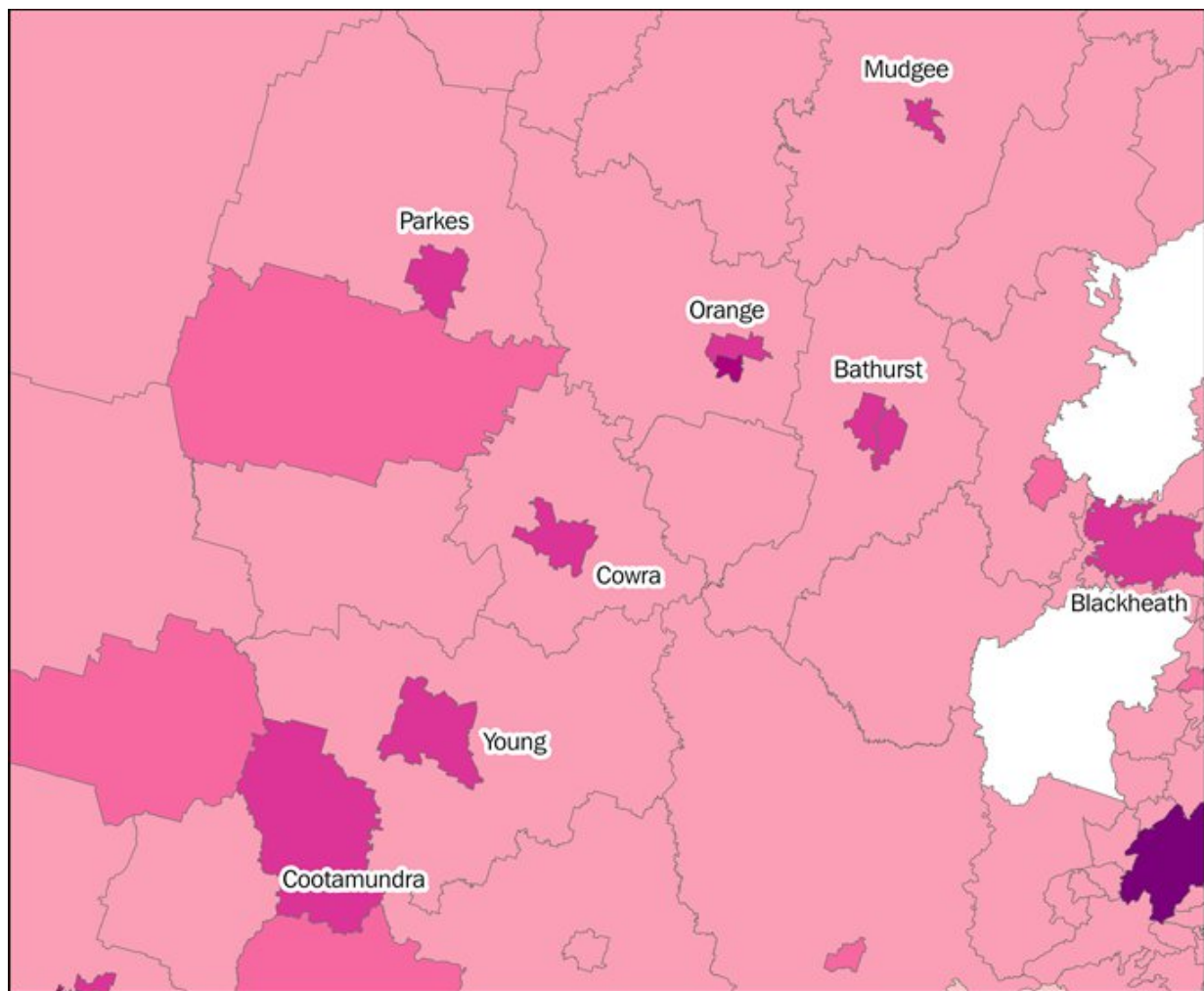
MAP 1 - AVERAGE COMMUTING DISTANCE FROM USUAL RESIDENCE - Greater Melbourne, SA2s, 2016(a)



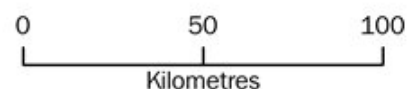
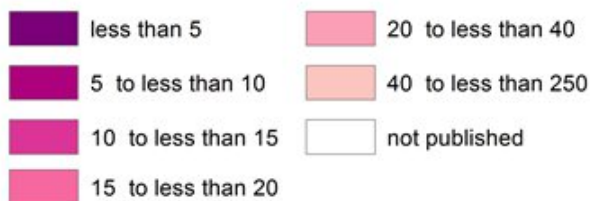
(a) Excludes people who travelled 250 km or more.
Source: ABS Census of Population and Housing, 2016

The SA2s containing major and regional towns generally had shorter average commuting distances, compared to the surrounding rural and remote SA2s. Map 2, for example, shows several regional towns in the Central Tablelands of New South Wales with average commuting distances of less than 20 km. This contrasts with the surrounding rural and remote SA2s where residents were travelling, on average, between 20 to 40 km.

MAP 2 - AVERAGE COMMUTING DISTANCE FROM USUAL RESIDENCE – Central Tablelands of New South Wales, SA2s, 2016(a)



Average commuting distance (kms)



(a) Excludes people who travelled 250 km or more.
Source: ABS Census of Population and Housing, 2016

The SA2s with an average commuting distance of greater than 40 km were also generally rural and remote, and in some cases contained a large population of workers employed in the Mining industry. For example the Meekatharra SA2 located in Western Australia and Outback SA2 in South Australia both contain a high proportion of persons employed in the Mining industry (16.1% and 12.9% of all employed persons respectively) and average commuting distances of 50.6 km and 50.3 km.

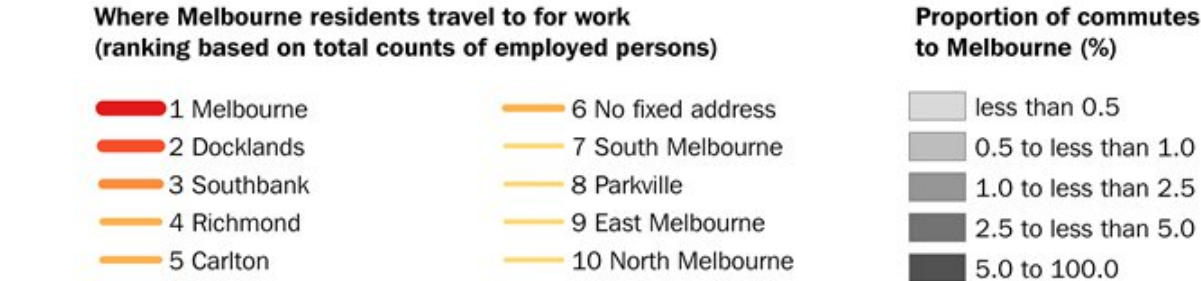
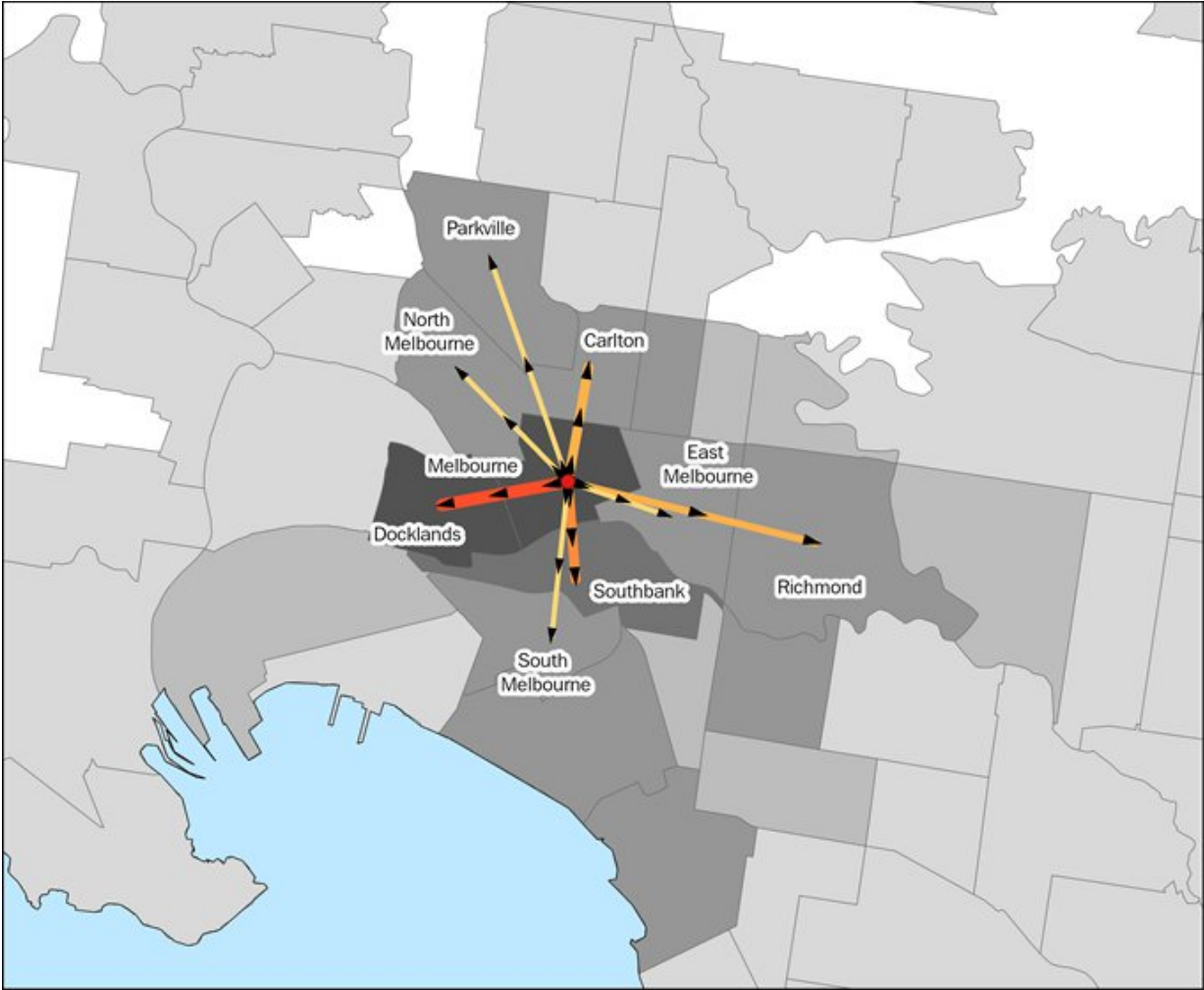
AVERAGE DISTANCE TO PLACE OF WORK

The first part of this article has explored the distance people travel to work by analysing the journey from their place of usual residence. However a different picture emerges when considering the commuting distances of people who work in an area, rather than where they usually live. The differences can be significant depending on which way we look at the origin and destination of workers. Through the lens of people travelling from a usual residence, we generally see commuters heading towards a central location (such as central business districts or regional hub), while through

the lens of people travelling to a place of work we can see the dispersion of where people live. For example persons who lived in Melbourne SA2 travelled on average 5.1 km to work. In contrast the average commuting distance of people working in Melbourne was 18.6 km. This high average is a result of the working population for Melbourne being drawn from people living in more dispersed locations.

For comparison, Map 3 and 4 illustrate examples of the flow of commutes based on where people live (Place of Usual Residence) and where people work (Place of Work) respectively.

MAP 3 - FLOW OF COMMUTES FROM USUAL RESIDENCE – Melbourne, SA2s, 2016(a)



(a) This map has been created for visualising the flow of commuters only, and is not representative of the commuting distance data.

Source: ABS Census of Population and Housing, 2016

MAP 4 - FLOW OF COMMUTES TO PLACE OF WORK – Melbourne, SA2s, 2016(a)



**Where the Melbourne work force is drawn from
(ranking based on total counts of employed persons)**

- 1 Melbourne
- 2 Richmond
- 3 Southbank
- 4 Brunswick
- 5 South Yarra - East

- 6 St Kilda
- 7 North Melbourne
- 8 Hawthorn
- 9 Northcote
- 10 Prahran - Windsor

**Proportion of commutes
to Melbourne (%)**

- less than 0.5
- 0.5 to less than 1.0
- 1.0 to less than 2.5
- 2.5 to less than 5.0
- 5.0 to 100.0

(a) This map has been created for visualising the flow of commuters only, and is not representative of the commuting distance data.

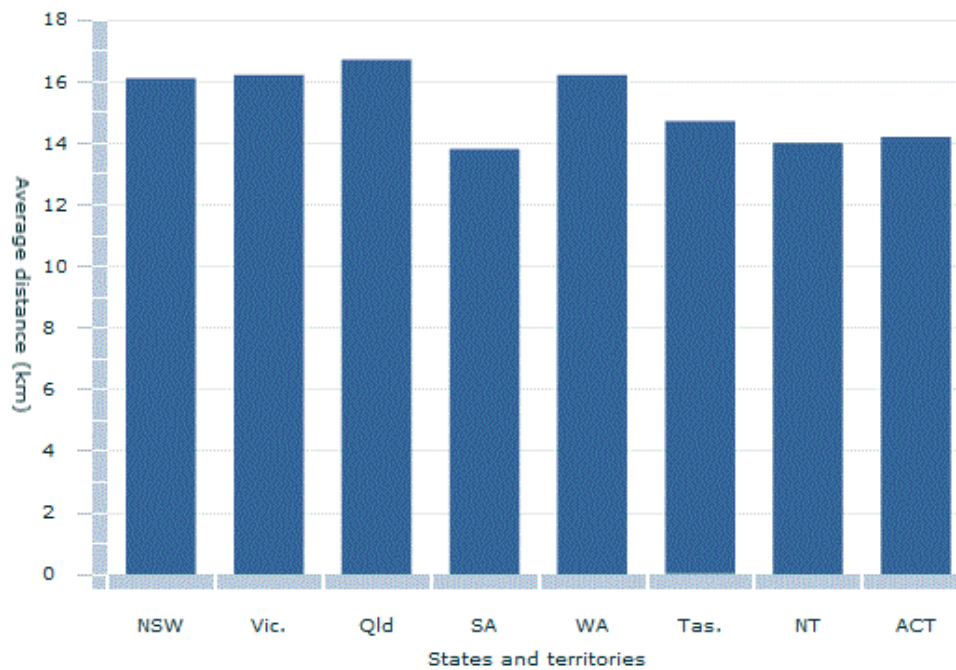
Source: ABS Census of Population and Housing, 2016

Commuting distance to place of work for Australia, states and territories, capital cities and rest of state

When analysing the data based on where people work, as opposed to where they live, different commuting distances were observed in states and territories, capital cities and SA2s.

These differences for states and territories, for example, are due to persons crossing borders when commuting to work, such as those living in Queanbeyan, New South Wales commuting to the Australian Capital Territory for work. Across states and territories, people in Queensland had the longest average commute to their place of work (16.7 km), followed by Victoria and Western Australia (16.2 km). People in South Australia and Northern Territory commuted the shortest average distance (13.8 km and 14.0 km respectively).

Average distances to place of work, state & territory, 2016(a)(b)



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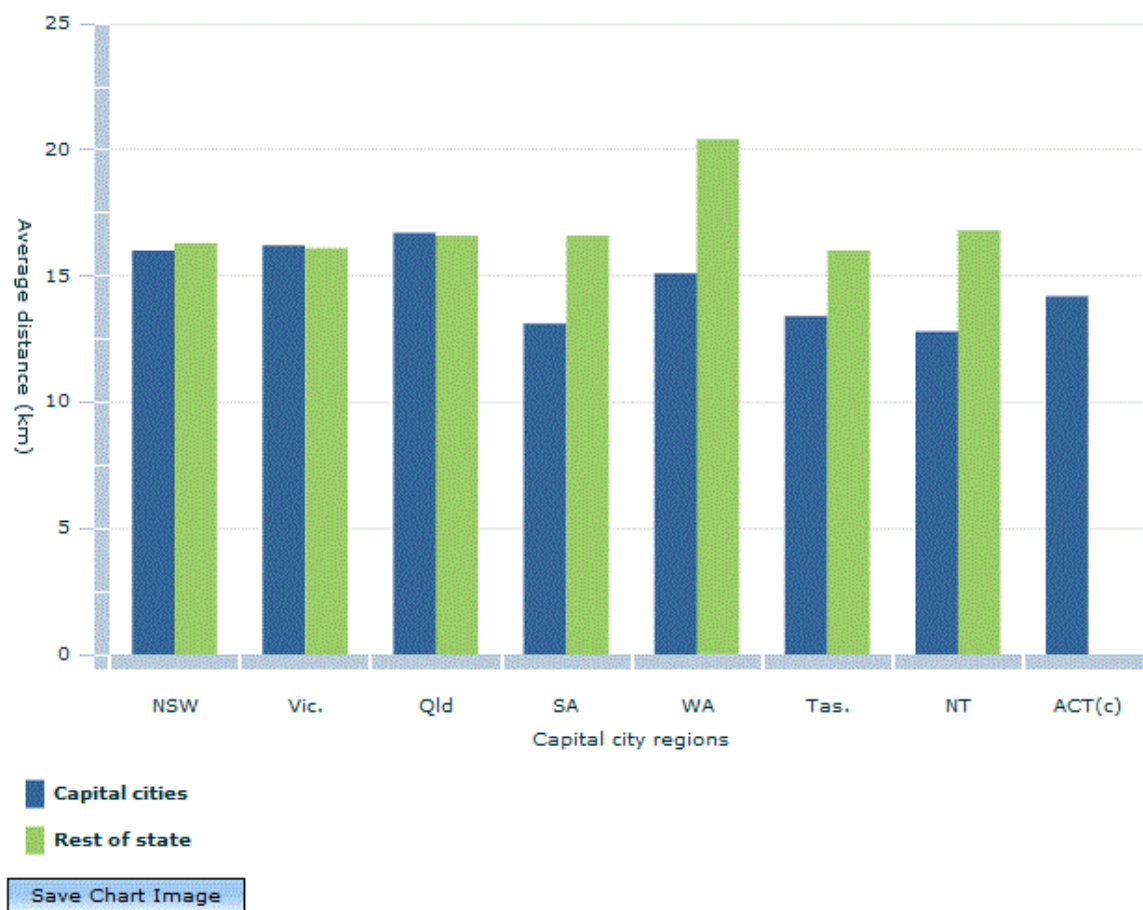
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Footnote(s): (a) Excludes Other Territories. (b) Excludes people who travelled 250km or more.

Source(s): ABS Census of Population and Housing, 2016

Of workers in capital cities, people in Brisbane (16.7 km) and Melbourne (16.2 km) had the longest average distances to their place of work, while those in Darwin and Adelaide had the shortest (12.8 km and 13.1 km respectively). People working outside of Perth in Western Australia had the longest average commuting distance across the whole of Australia (20.4 km).

Average distances to place of work, Greater Capital City Statistical Areas (GCCSA), 2016(a)(b)



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Footnote(s): (a) Excludes Other Territories. (b) Excludes people who travelled 250km or more. (c) The Australian Capital Territory does not have a corresponding Rest of State.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance to place of work for Statistical Area Level 2

The SA2s with the top 10 highest number of workers (based on the count of employed persons over the age of 15 years) have the following corresponding average commuting distances:

1. Sydney - Haymarket - The Rocks: 18.9 km
2. Melbourne: 18.6 km
3. Perth City: 16.8 km
4. Brisbane City: 17.2 km
5. Adelaide: 13.4 km
6. Dandenong: 19.1 km
7. Docklands: 21.1 km
8. Parramatta: Rose Hill - 19.1 km
9. North Sydney - Lavender Bay: 19.5 km
10. Macquarie Park - Marsfield: 19.0 km

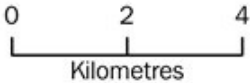
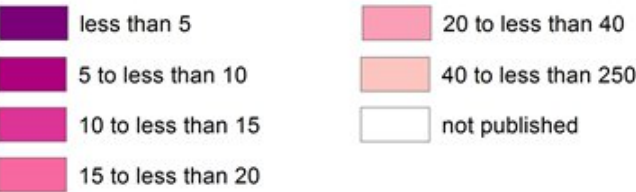
From the communities listed above, people working in Adelaide had the shortest average commuting distance (13.4 km) to their place of work, while those working in Docklands, in the inner-west of Melbourne, had the longest (21.1 km). In Adelaide, people were most commonly commuting from their residences in Unley-Parkside (around 2.9% of all commutes from Adelaide), while people were most commonly commuting to Docklands from their residences in Melbourne (around 2.0% of all travel to Docklands).

Maps 5 and 6 show the average commuting distance to place of work and the counts of employed persons working there per square kilometre, for SA2s within Sydney. The SA2s with the largest count of employed persons all averaged similar distances to place of work (e.g. Sydney - Haymarket - The Rocks, 18.9 km, North Sydney - Lavender Bay, 19.5 km, Macquarie Park – Marsfield, 19.0 km, Pyrmont – Ultimo, 17.0 km and Surry Hills, 16.9 km). This was common across all capital cities in Australia.

MAP 5 - AVERAGE COMMUTING DISTANCE TO PLACE OF WORK – Sydney, SA2s, 2016(a)

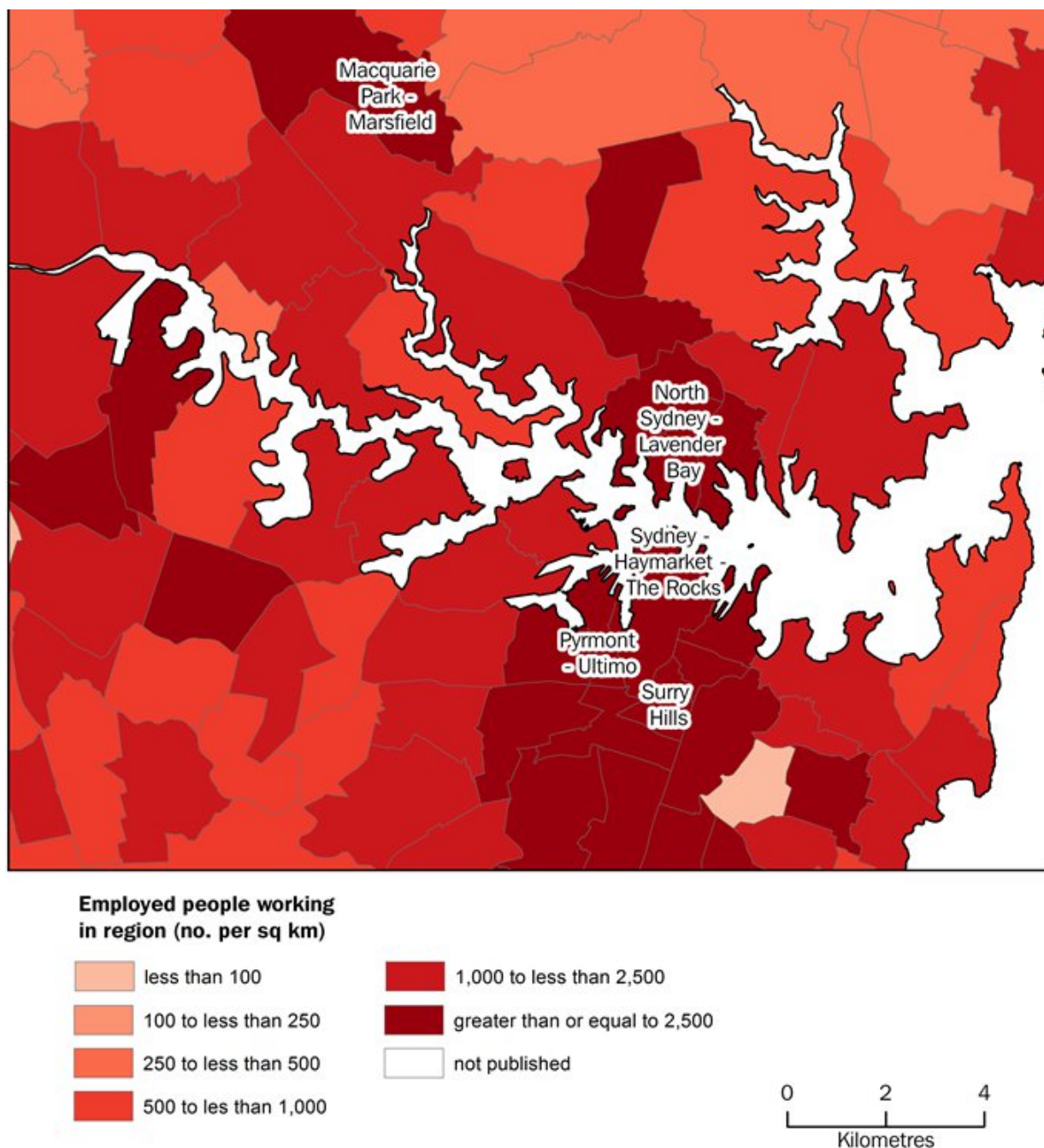


Average commuting distance (kms)



(a) Excludes people who travelled 250 km or more.
Source: ABS Census of Population and Housing, 2016

MAP 6 - COUNTS OF EMPLOYED PERSONS PER SQUARE KILOMETRE - Sydney, SA2s, 2016(a)



(a) Excludes people who travelled 250 km or more.
Source: ABS Census of Population and Housing, 2016

Commuting Distance by Personal Characteristics

COMMUTING DISTANCE BY PERSONAL CHARACTERISTICS

INTRODUCTION

Commuting distance data provides a measurement of the distance travelled between a person's Place of Usual Residence and Place of Work. There are many socio-economic factors that may influence the distance a person commutes to work. This article explores commuting distance data in association with some personal characteristics collected within the 2016 Census of Population and Housing. This has included analysis of commuting distance by age, sex, occupation, industry, income, education and mode of transport. The data presented in this article explores the distance people travel to work from their Place of Usual Residence.

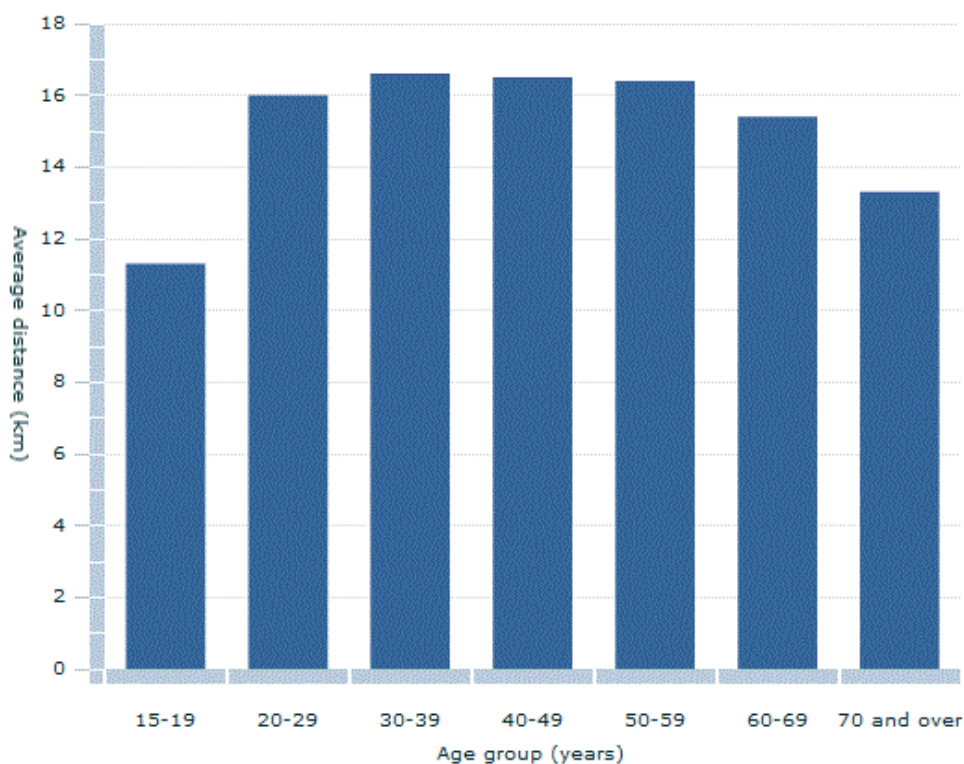
More information on the methodology for calculating commuting distance can be found in the **Explanatory Notes** tab at the top of this page, while data cubes are available on the **Downloads** tab.

AGE

For the working age population (defined here as people aged between 20 to 69 years), commuting distance did not appear to vary greatly across Australia. People aged 30 to 39 years had the longest average commuting distance (16.6 km), closely followed by those aged 40 to 49 years (16.5 km) and 50 to 59 years (16.4 km).

Working age people did tend to commute longer distances than young people and older people. For example, people aged between 15 to 19 years had the shortest average commuting distance (11.3 km). This is possibly related to persons in this age range having a greater reliance on transport other than driving due to the legal age of holding a drivers licence, as well as cost of car ownership for those at the beginning of their working lives. Only 34% of persons in the 15 to 19 age group drove to work, compared with 63% of those 20 years and older.

Average commuting distances by age groups, Australia, 2016(a)(b)(c)



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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence.

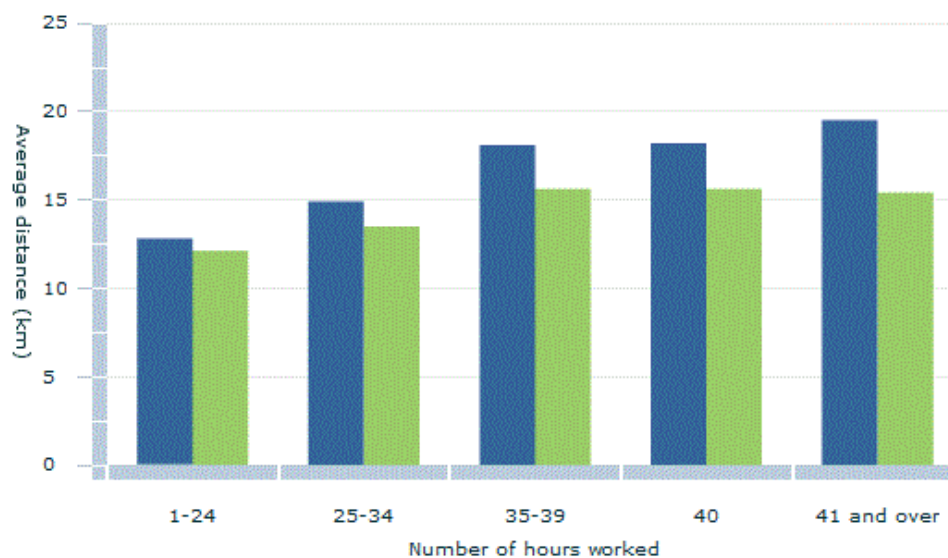
Source(s): ABS Census of Population and Housing, 2016

SEX

The average commuting distance in Australia was longer for males (17.7 km) than females (14.2 km). The Census showed that males were more likely to be employed in occupations such as Machinery operators and drivers (90% of workers were male) and Technicians and trades workers (83% of workers were male), which were also the occupations with the longest average commuting distances.

The average commuting distance for males and females were similar where hours worked was low. Where the work week was between 1 to 24 hours, the average commute for males was 12.8 km, compared to 12.1 km for females. In comparison, when males worked more than 41 hours for the week, they typically commuted 4.1 km more, on average (19.5 km), than women who worked the same number of hours (15.4 km).

Average commuting distances by hours worked, Australia, 2016(a)(b)(c)(d)



Males
Females

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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence. (d) Excludes number of hours worked 'none' and 'not stated'.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance by sex within states and territories

The longest average commuting distances for males was in Queensland (18.9 km), followed by Western Australia (18.0 km). For women, the longest average commuting distance was in Victoria (14.6 km) followed by New South Wales (14.5 km). The shortest commuting distance was in the Australian Capital Territory for both males (12.3 km) and females (11.2 km).

Average commuting distances by sex, state & territory, 2016(a)(b)(c)



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Footnote(s): (a) Excludes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence.

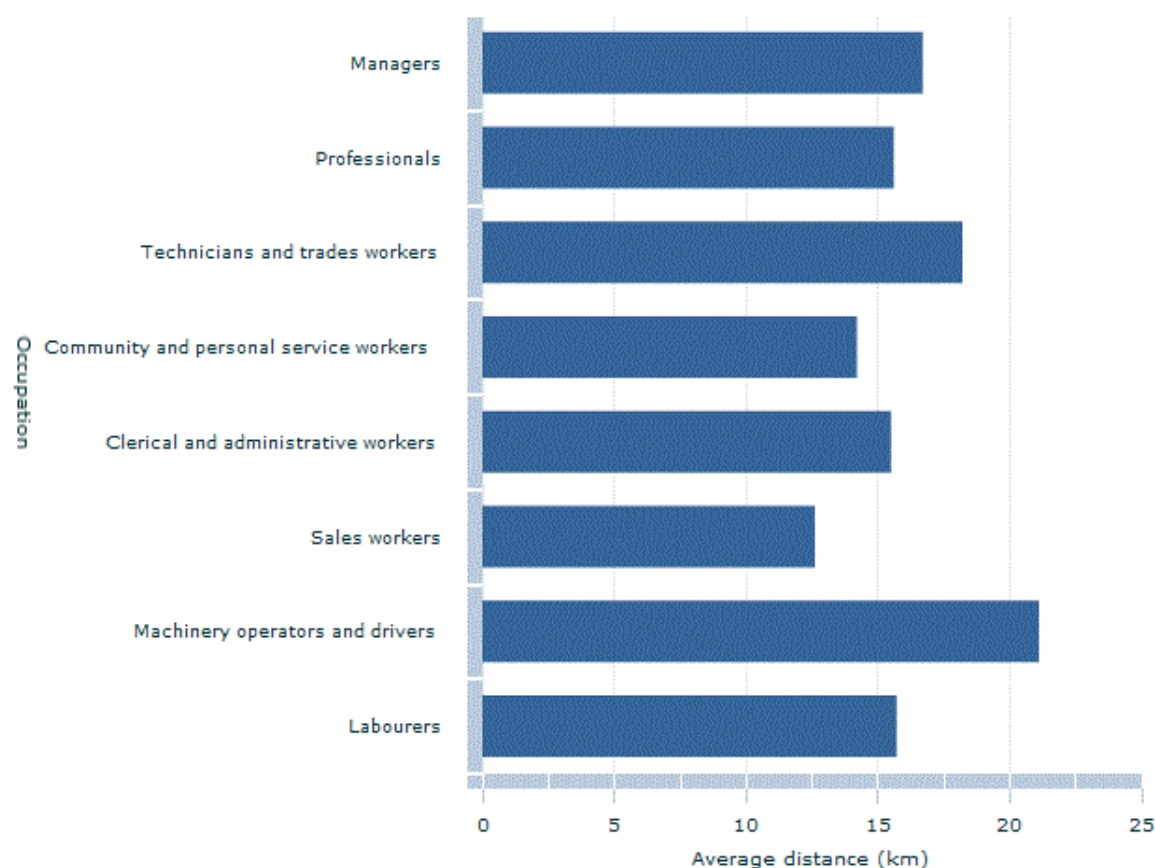
Source(s): ABS Census of Population and Housing, 2016

OCCUPATION

The average commuting distance for most occupations in Australia was less than 17.0 km. The exception was Machinery operators and drivers and Technicians and trade workers, who had an average commuting distance of 21.1 km and 18.2 km respectively. People who worked in these occupations and travelled long distances (100 km to less than 250 km) were proportionally more likely to spend Census night away from home, compared to those who commuted shorter distances. Around 20% of Machinery operators and drivers and 18% of Technicians and trade workers were away from home on Census night which might be an indication of fly-in/fly-out workers.

Sales workers travelled the shortest average commuting distances in Australia (12.6 km).

Average commuting distances by occupation, Australia, 2016(a)(b)(c)(d)



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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence. (d) Occupation excludes 'inadequately described' and 'not stated'.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance by occupation within states and territories

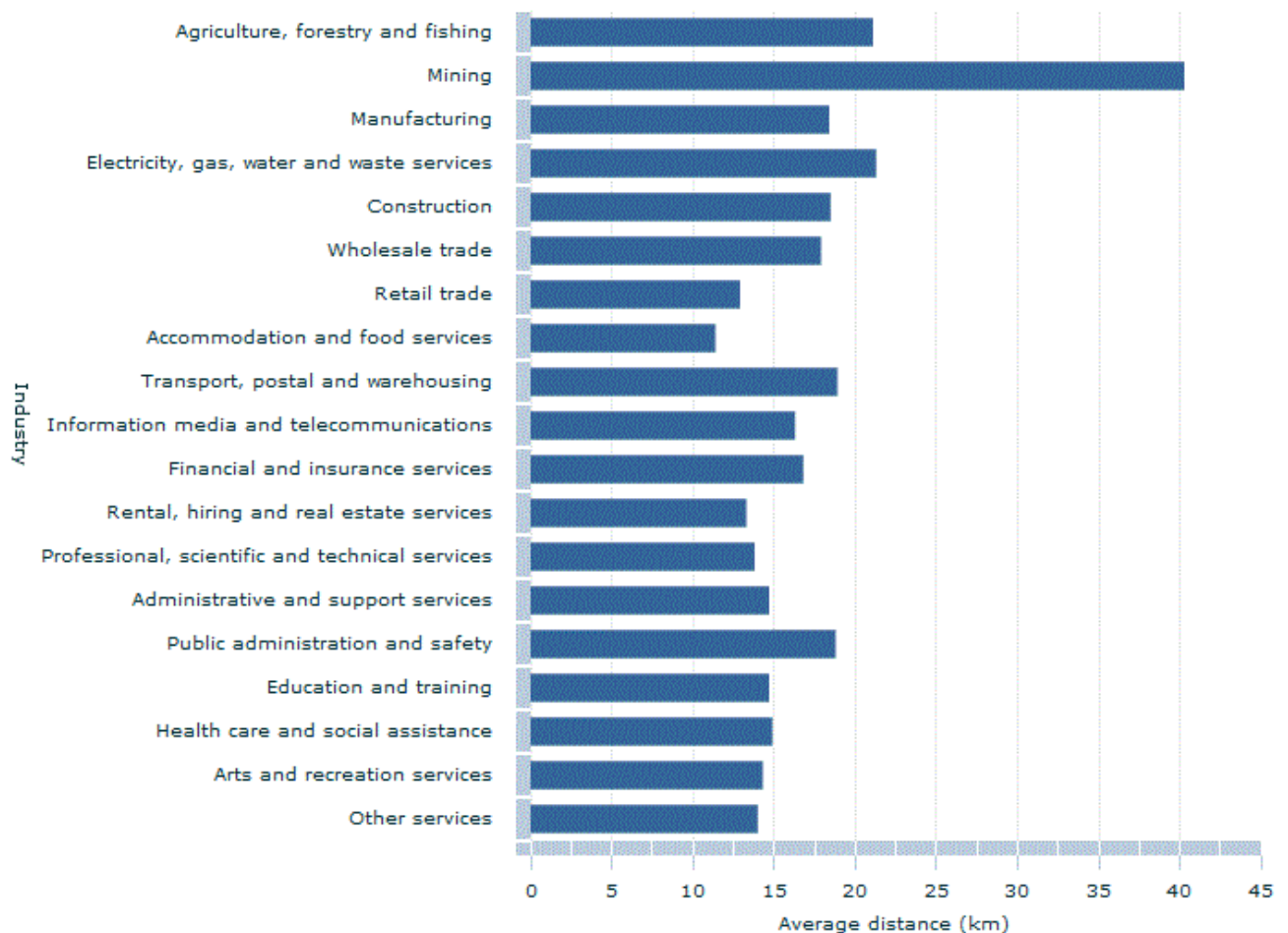
Machinery operators and drivers in Queensland and Western Australia travelled the longest average distances (25.3 km and 23.4 km respectively); however their counterparts in the Australian Capital Territory travelled considerably shorter average distances (13.9 km). Sales workers in the Northern Territory and Australian Capital Territory travelled the shortest distances on average (9.5 km and 10.0 km respectively), while the longest commute for Sales workers was in Victoria (13.0 km).

INDUSTRY

In Australia workers in the Mining industry commuted the longest average distance (40.3 km), followed by workers in Electricity, gas, water and waste services and in Agriculture, forestry and fishing (both around 21 km). Around 20% of people working in Mining who travelled long distances (100 km to less than 250 km) were away from home on Census night, potentially indicating Fly-in/Fly-out workers.

The industry with workers travelling the shortest distance was Accommodation and food services with an average distance of 11.4 km, followed by Retail trade (12.9 km). The people employed in these two industries were more likely to work part-time (50% and 59% respectively) than people in other industries (29%). They also had high proportions of young people (15-19 years), who made up 14% of total people employed in Retail trade and 24% of people in Accommodation and food services, although across all industries 15-19 year olds made up only 5% of persons employed.

Average commuting distances by industry, Australia, 2016(a)(b)(c)(d)



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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence. (d) Industry excludes 'inadequately described' and 'not stated'.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance by industry within states and territories, capital cities and rest of state

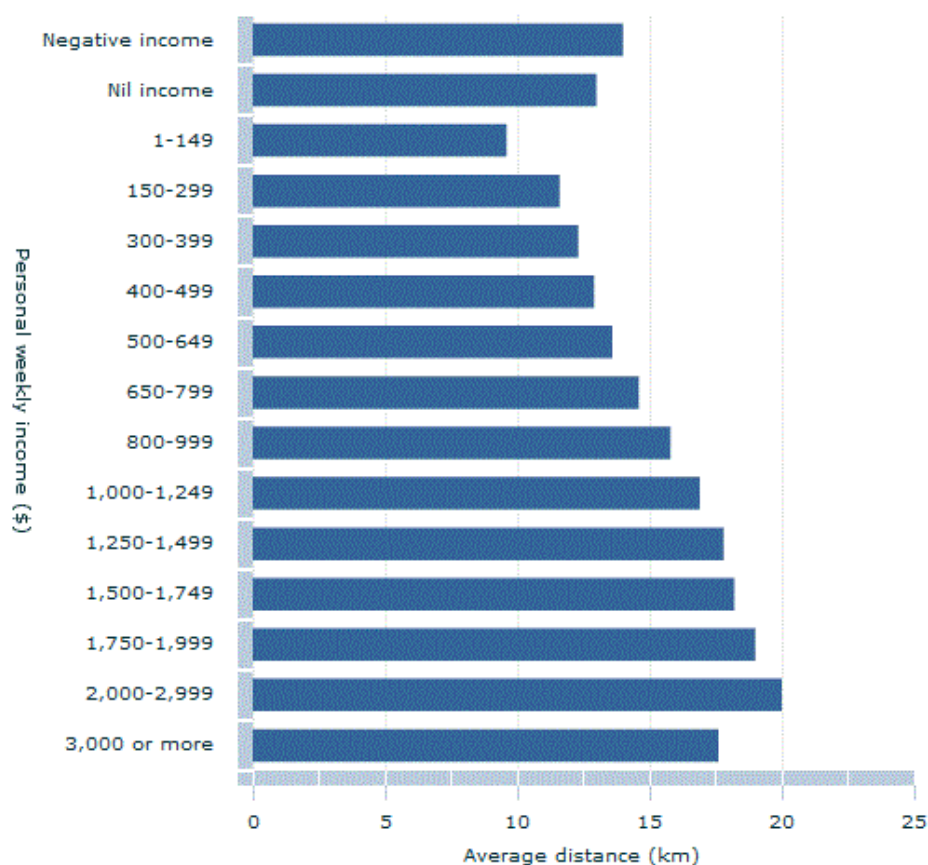
People working in Mining had the longest average commuting distance for all states and territories. Tasmania was the state with the longest average distance for workers in Mining (60.3 km). People working in Accommodation and food services had the shortest average commuting distance in most states and territories except Tasmania and the Northern Territory, ranging from 9.8 km (Australian Capital Territory) to 11.9 km (Victoria). More than 60% of people employed in Accommodation and food services were working on a part time basis.

People working in Mining also had the longest average commuting distances for both capital cities and rest of state. For example, those working in Mining and living in Darwin had the longest commuting distance across capital cities (43.7 km), while those living outside of Brisbane's capital city in Queensland had the longest commutes (66.7 km) overall.

INCOME

Overall, people with higher incomes appear to travel longer commuting distances. People with a weekly income of \$2,000-\$2,999 travelled the longest commuting distance (20.0 km), followed by people with a weekly income of \$1,750-\$1,999 (19.0 km). People with a weekly income of \$1-\$149 had the shortest average commuting distance (9.6 km).

Average commuting distances by personal weekly income, Australia, 2016(a)(b)(c)(d)



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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence. (d) Excludes income 'not stated'.

Source(s): ABS Census of Population and Housing, 2016

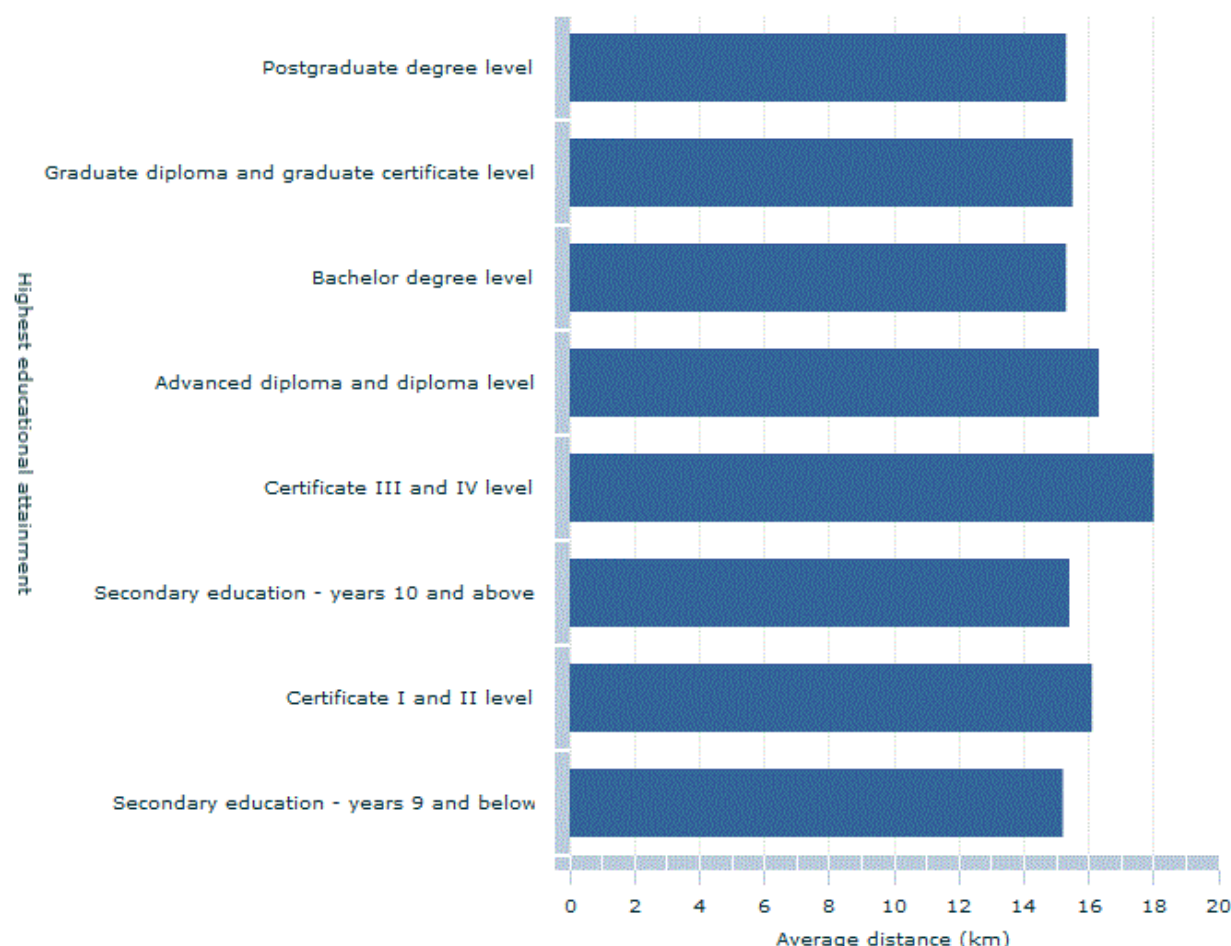
Commuting distance by income within capital cities and rest of state

People living in capital cities travelled shorter commuting distances compared with people outside capital cities for all income ranges. The greatest difference in average commuting distance was for people with a weekly income of \$2,000-\$2,999, where people in capital cities commuted 17.3 km compared with people in the rest of state who commuted 28.7 km. The smallest difference was for people with a weekly income of \$650-\$799, with people in capital cities (14.2 km) commuting on average 1.3 km less than people living outside capital cities (15.5 km).

LEVEL OF HIGHEST EDUCATIONAL ATTAINMENT

Across Australia, people with a Certificate III or IV had the longest average commuting distance (18.0 km), followed by people with an Advanced diploma (16.3 km) and Certificate I & II (16.1 km). People with a Secondary education (Years 9 and below) had the shortest average commuting distance (15.2 km), followed by those with a Bachelor degree (15.3 km) and Postgraduate degree (15.3 km).

Average commuting distances by highest educational attainment, Australia, 2016(a)(b)(c)(d)



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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence. (d) Excludes Highest educational attainment, 'inadequately described', 'no educational attainment' and 'not stated'.

Source(s): ABS Census of Population and Housing, 2016

Commuting distance by highest education qualifications within states and territories

Across all states and territories, people with a Certificate III & IV commuted the longest average distance, with those living in Queensland travelling the furthest (18.8 km).

The shortest average commuting distance by education qualification varied across states and territories. People with a Postgraduate degree had the shortest commuting distance in Northern Territory, South Australia, Tasmania and Western Australia, ranging from 11.7 km to 14.5 km. In Queensland, people with Postgraduate degrees shared the shortest commuting distance with people who had a Bachelor degree, both averaging 15.2 km. However, people with a Secondary education (Years 9 and below) had the shortest commuting distance for the remaining states and territories, ranging from 10.0 km in the Australian Capital Territory to 14.8 km in New South Wales.

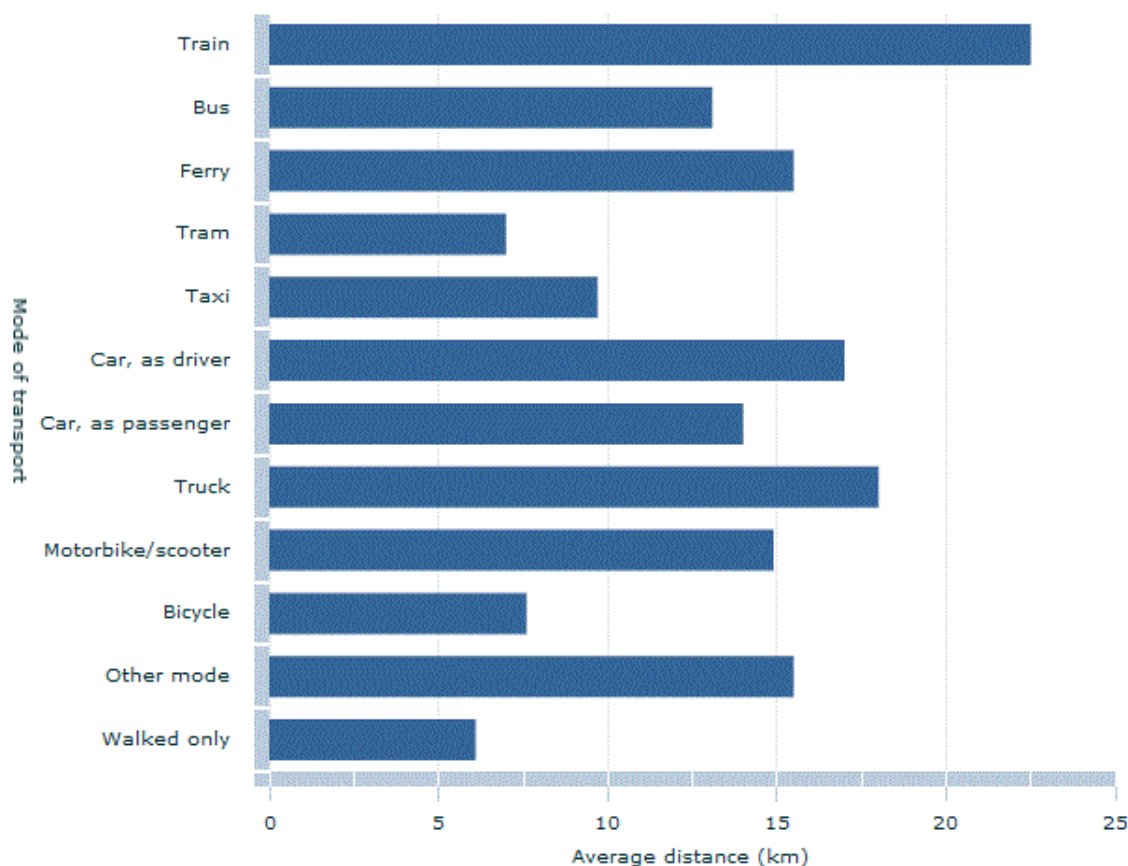
MODE OF TRAVEL TO WORK

At a national level, people who travelled to work by train had the longest average commuting distance (22.5 km), followed by truck (18.0 km) and driver of a car (17.0 km). Generally those who took active transport (those who walked or rode a bicycle to work) commuted the shortest distances. People who walked to work travelled an average distance of 6.1 km, while bicycle commuters had only a slightly

longer average commuting distance (7.6 km).

Refer to the data cube usage notes in the **Explanatory Notes** for more information on Mode of Travel to Work.

Average commuting distances by mode of travel to work, Australia, 2016(a)(b)(c)(d)(e)



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Footnote(s): (a) Includes Other Territories. (b) Excludes people who travelled 250km or more. (c) Based on distance from usual residence. (d) Place of Work and Method of Travel to Work are collected on the Census form but represent different reference periods. (e) Excludes 'worked at home', 'did not go to work', and 'not stated'.

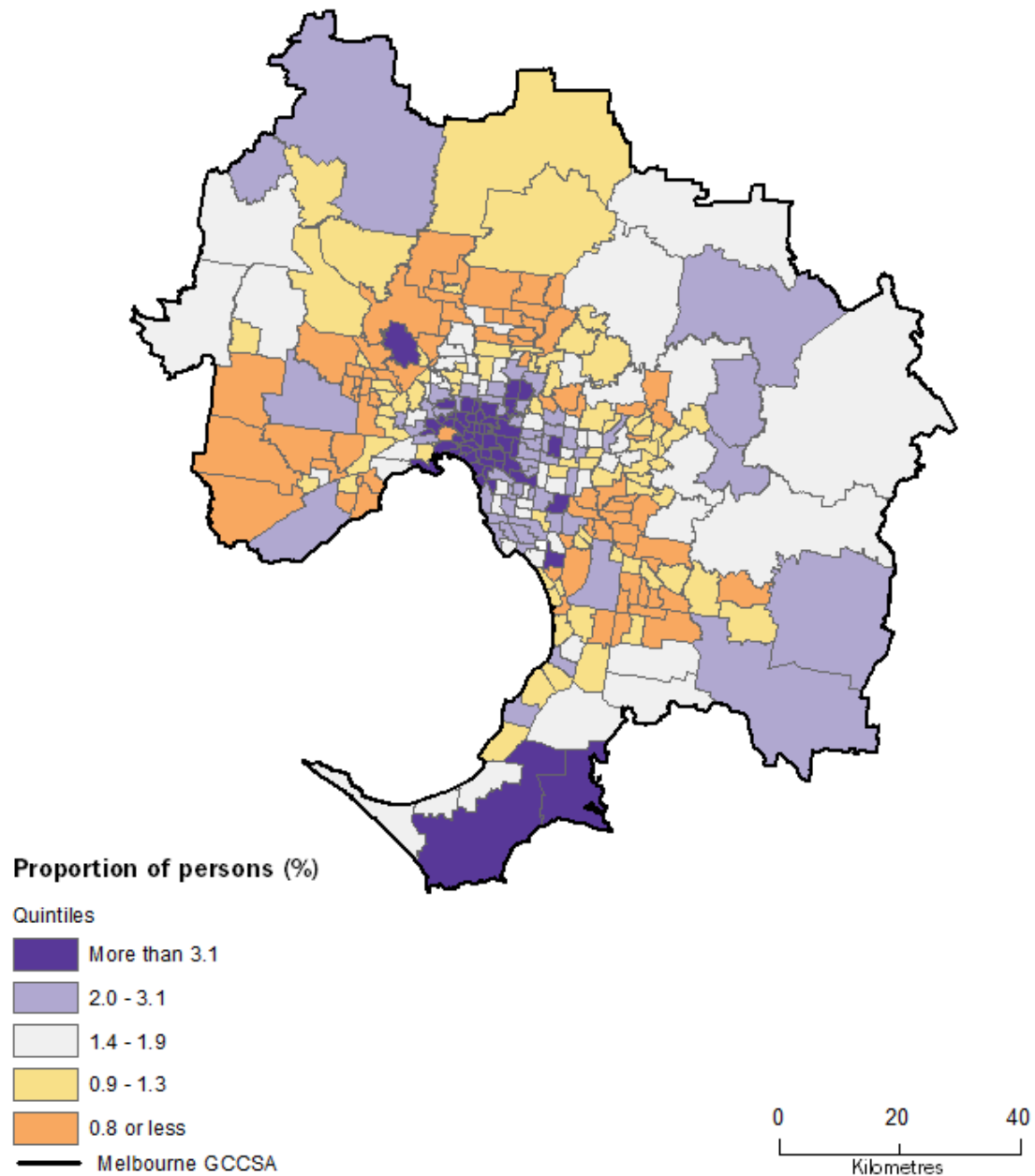
Source(s): ABS Census of Population and Housing, 2016

Commuting distance by mode of transport within states and territories, capital cities and rest of state

For each state and territory, the majority of commuters travelled to work as a driver of a car. Queensland had the longest distance to work for people who commuted using this mode of transport (17.6 km) compared with the Australian Capital Territory which had the shortest (13.2 km). Active transport commuters generally had the shortest journey with those who walked to work in the Australian Capital Territory reporting the shortest average commuting distance of 2.9 km, followed by New South Wales (4.5 km) and Victoria (4.8 km).

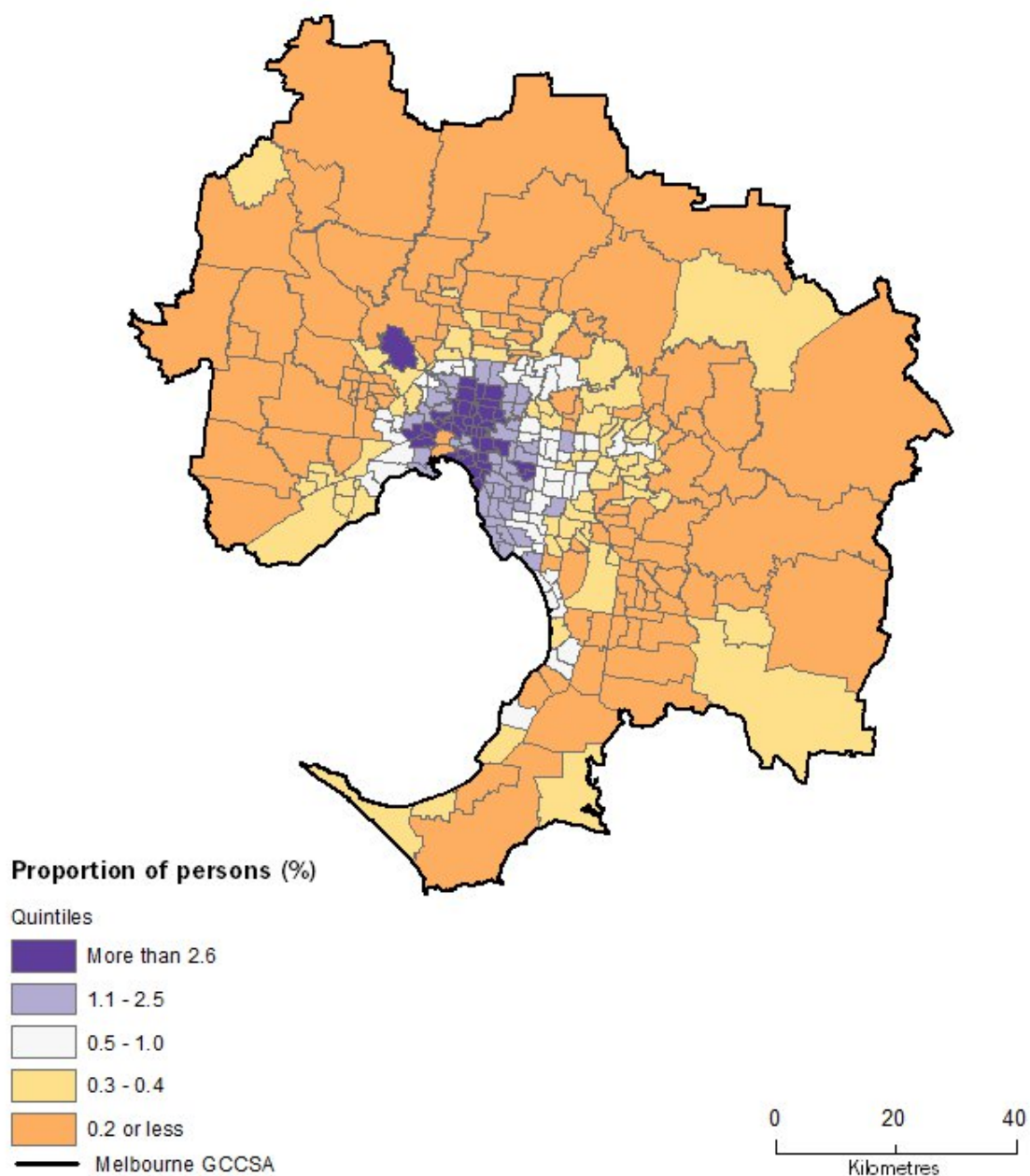
Across most capital cities, people who took active transport commuted short distances, while those who drove to work or caught a train generally travelled much longer distances. The choice of transport is often related to a person's proximity to their place of work. For example, in Melbourne, many people who walk to work or ride a bicycle tend to live in the centralised areas of the city (see Map 1 and 2), while many people who were a driver of a car or take a train (see Map 3 and 4) to work tended to live in the outer areas of the city. This pattern is generally seen across most capital cities in Australia.

MAP 1 - PROPORTION OF PERSONS WHO WALKED TO WORK - Statistical Areas Level 2 (SA2s) within Greater Melbourne, 2016



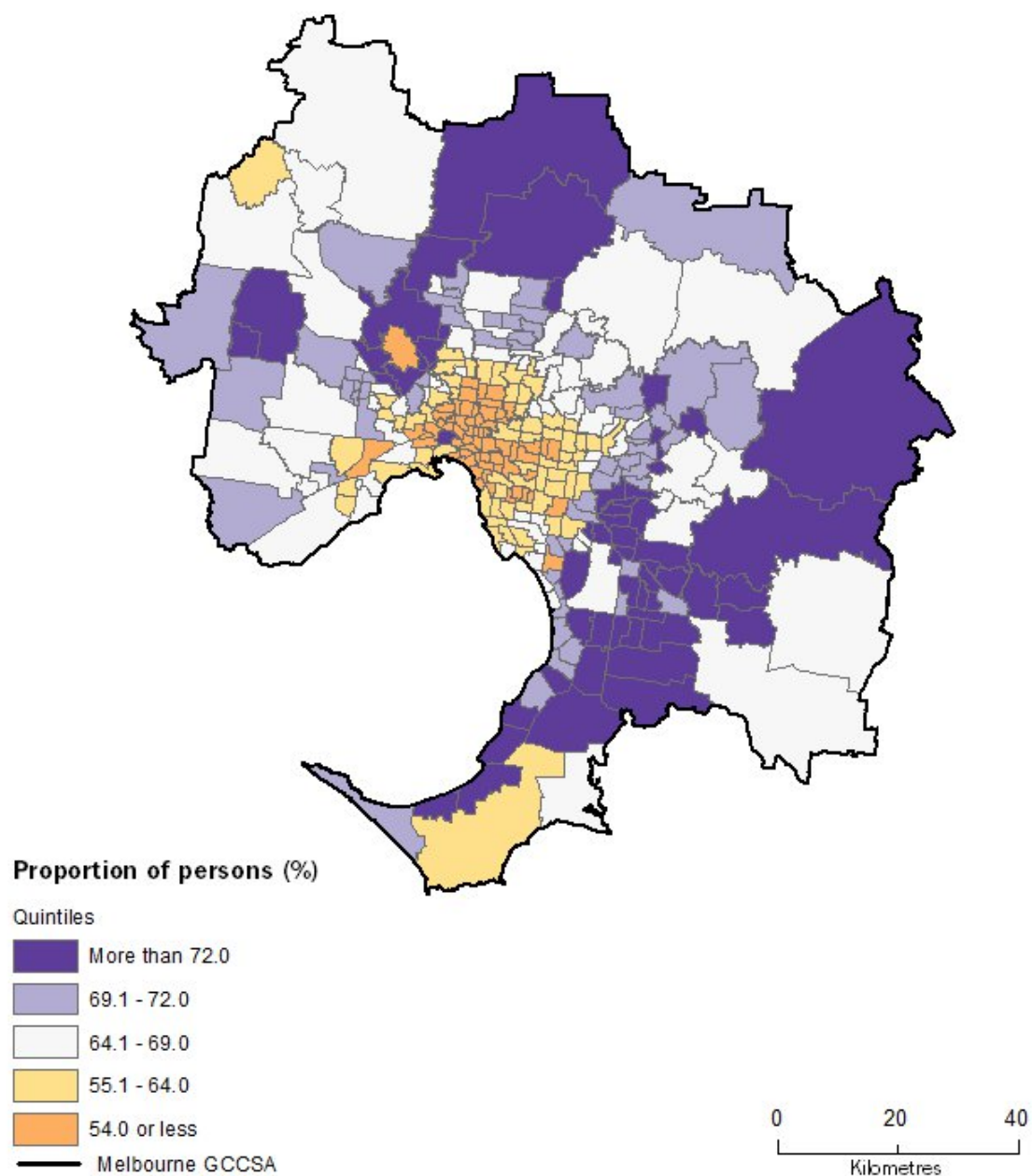
Source: ABS Census of Population and Housing, 2016

MAP 2 - PROPORTION OF PERSONS WHO BICYCLED TO WORK - SA2s within Greater Melbourne, 2016



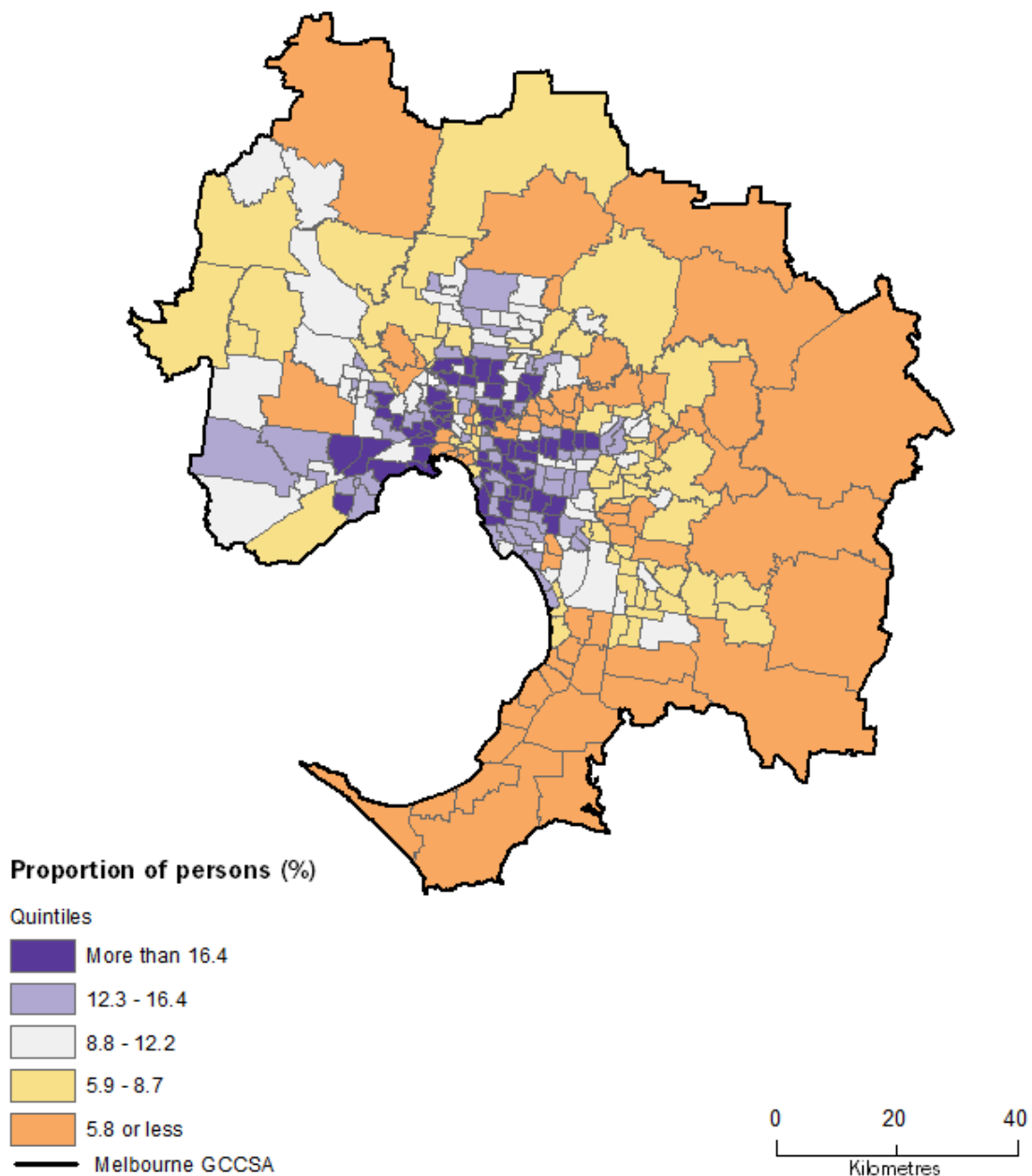
Source: ABS Census of Population and Housing, 2016

MAP 3 - PROPORTION OF PERSONS WHO DROVE A CAR TO WORK - SA2s within Greater Melbourne, 2016



Source: ABS Census of Population and Housing, 2016

MAP 4 - PROPORTION OF PERSONS WHO CAUGHT THE TRAIN TO WORK - SA2s within Greater Melbourne, 2016



Source: ABS Census of Population and Housing, 2016

Interactive Maps - Commuting Distance

INTERACTIVE MAPS

COMMUTING DISTANCE

The following pages contain interactive maps that allow users to explore the commuting distances of employed Australians for Statistical Area Level 2 (SA2s).

The two maps included are:

- **Commuting Distance from Place of Usual Residence**
- **Commuting Distance to Place of Work**

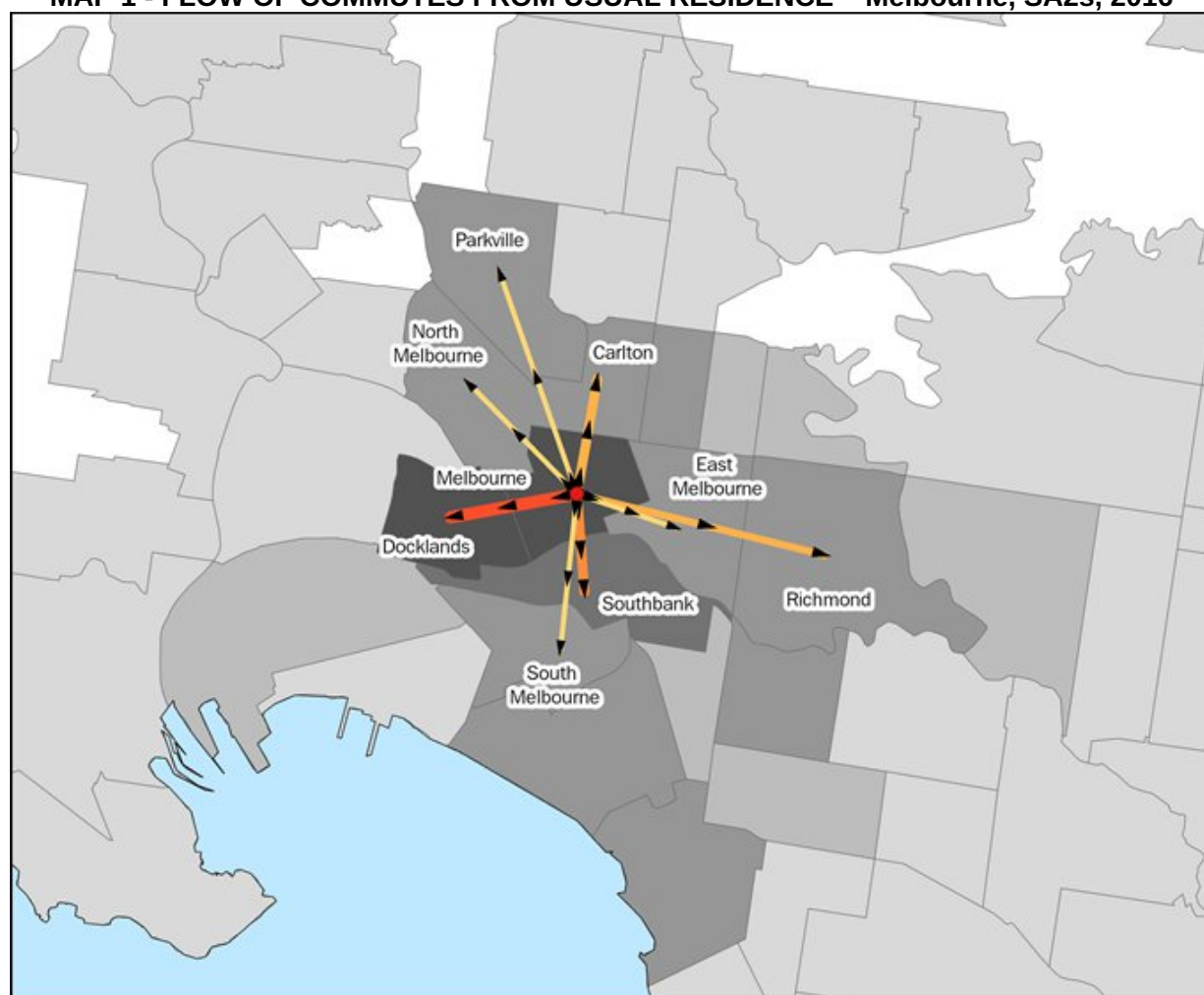
A different picture of commuting distance emerges depending on which way we look at the origin and destination of workers. The average commuting distance reported for a community (such as an SA2) will generally differ depending on if we look through the lens of people who live in that area (Place of Usual Residence) and people who work in that area (Place of Work). Two separate maps were produced to allow users to view commutes distances from Place of Usual Residence and to Place of Work.

For comparison, Map 1 and 2 illustrate examples of the flow of commutes based on where people live (Place of Usual Residence) and where people work (Place of Work) respectively.

Information about the geographic areas used in the interactive maps is available on the Australian Statistical Geography Standard (ASGS) page.

The underlying data used to create the interactive maps is available in data cubes from the **Downloads tab** at the top of this page, and additional user notes can be found in the **Explanatory Notes tab**

MAP 1 - FLOW OF COMMUTES FROM USUAL RESIDENCE – Melbourne, SA2s, 2016



**Where Melbourne residents travel to for work
(ranking based on total counts of employed persons)**

- | | |
|-------------|--------------------|
| 1 Melbourne | 6 No fixed address |
| 2 Docklands | 7 South Melbourne |
| 3 Southbank | 8 Parkville |
| 4 Richmond | 9 East Melbourne |
| 5 Carlton | 10 North Melbourne |

**Proportion of commutes
to Melbourne (%)**

- | |
|----------------------|
| less than 0.5 |
| 0.5 to less than 1.0 |
| 1.0 to less than 2.5 |
| 2.5 to less than 5.0 |
| 5.0 to 100.0 |

(a) This map has been created for visualising the flow of commuters only, and is not representative of the commuting distance data.

Source(s): ABS Census of Population and Housing, 2016

MAP 2 - FLOW OF COMMUTES TO PLACE OF WORK – Melbourne, SA2s, 2016



**Where the Melbourne work force is drawn from
(ranking based on total counts of employed persons)**

- 1 Melbourne
- 2 Richmond
- 3 Southbank
- 4 Brunswick
- 5 South Yarra - East

- 6 St Kilda
- 7 North Melbourne
- 8 Hawthorn
- 9 Northcote
- 10 Prahran - Windsor

**Proportion of commutes
to Melbourne (%)**

- less than 0.5
- 0.5 to less than 1.0
- 1.0 to less than 2.5
- 2.5 to less than 5.0
- 5.0 to 100.0

(a) This map has been created for visualising the flow of commuters only, and is not representative of the commuting distance data.

Source(s): ABS Census of Population and Housing, 2016

Feature Article: Journey to Work in Australia

JOURNEY TO WORK IN AUSTRALIA

Jim Cooper and Jonathan Corcoran

Queensland Centre for Population Research, School of Earth and Environmental Sciences, The University of Queensland, Australia.

1. THE SIGNIFICANCE OF THE JOURNEY TO WORK

The journey to work is a daily reality for many Australians with important social, economic and environmental consequences. The Australian Census of Population and Housing is the main source of data on the journey to work in Australia. The journey to work is captured by an individual's location of usual residence, their location of workplace along with the method by which they commuted. For the first time, 2016 Census data has been released with the distance travelled to work, enabling further analysis on this topic to be performed. See *Commuting Distance for Australia* for more information. This article focuses on the application of Census data to understand the characteristics of the journey to work in Australia. The Census provides a rich source of information on commuting patterns and helps us understand how these patterns differ by mode of travel, gender, occupation as well as their variation across our capital cities and other regions.

2. HOW MANY AND HOW FAR DO PEOPLE COMMUTE?

In Australia 9.2 million people were recorded as commuting to work on Census day, on average travelling 16.5 kilometres (km) to reach their workplace. This figure compares to estimates of 10.9 km in New Zealand¹, 15.0 km in England and Wales² and 12.0 km in The Netherlands³. For this article, average distance has been calculated using the distance variable available in TableBuilder and employed in the ABS article *Commuting Distance for Australia*, but only those persons who travelled to work on Census day have been included in the calculation.

TABLE 1: COMMUTERS(a) - DISTANCE OF THE COMMUTE BY GCCSA AND REGIONAL AREAS

Greater Capital City Statistical Area (GCCSA)	Average commute GCCSA (km)(b)		Average commute (km)(b)
Greater Sydney	16.5	Rest of NSW	16.9
Greater Melbourne	16.8	Rest of Victoria	16.7
Greater Brisbane	17.4	Rest of Queensland	16.9
Greater Adelaide	13.5	Rest of SA	17.2
Greater Perth	15.7	Rest of WA	20.7
Greater Hobart	13.8	Rest of Tasmania	16.4
Greater Darwin	13.1	Rest of NT	16.1
Australian Capital Territory	14.4		

(a) Employed persons who did not travel to work on Census day have been excluded, as have those with no fixed place of work.

(b) Average distance based on place of work in the week prior to Census day and place of usual residence. Excludes distances 250 km and over between place of usual residence and place of work.

Source: ABS Census of Population and Housing, 2016

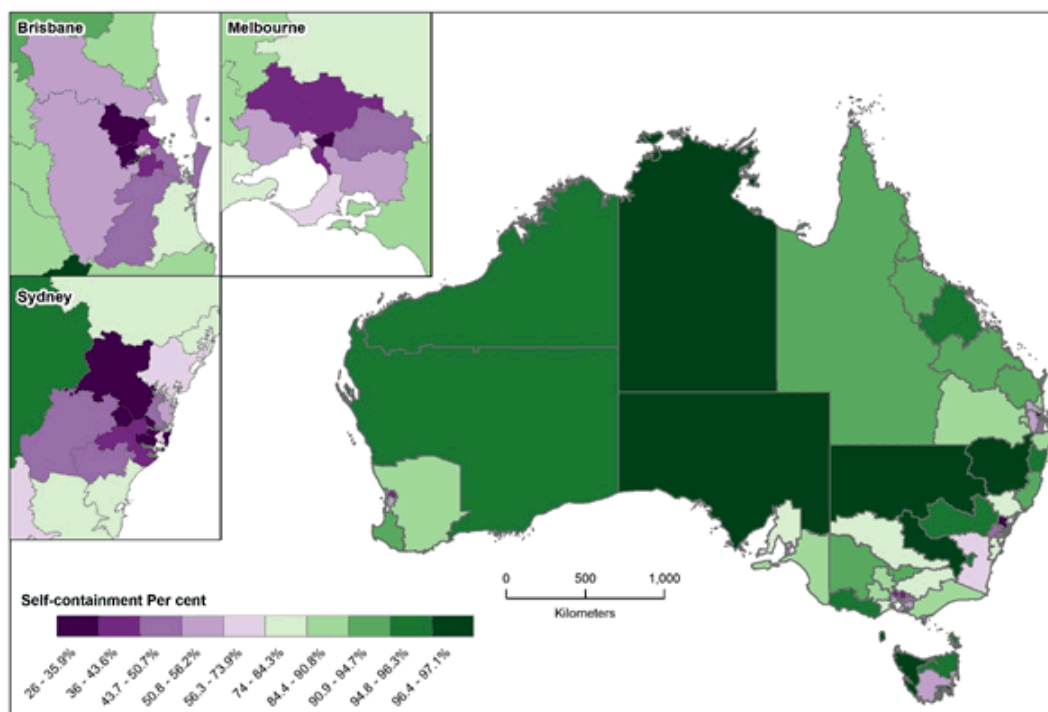
We observe important differences in the distance of this commute across cities, regional and remote areas, reflecting variations in the form and structure of our settlements. That is, how they are geographically organised in terms of land use and transportation infrastructure, along with their physical extent. Table 1 highlights these variations across the country, showing the shorter commutes in the small capitals of Greater Darwin (13.1 km), Greater Adelaide (13.5 km), Greater Hobart (13.8 km) and the Australian Capital Territory (14.4 km) and longer journey to work trips in regional and remote areas, in particular this is the case for the Rest of WA (20.7 km). Commuting distance can be calculated in several ways. For a more detailed discussion of commuting distance and how these calculations have been made, see: *Commuting Distance for Australia*.

3. SELF-CONTAINMENT

For 60% of employed Australians, work was reported to be in the same labour market region (Statistical Area 4 - SA4) as their residence. The proportion of individuals living and working in the same labour market region is referred to as the level of self-containment and is seen as a positive characteristic reflecting a balance between jobs and dwellings in an area. It also holds important environmental consequences in its capacity to increase the likelihood of transport to work via methods other than private cars, given distances between home and work are probably shorter. Despite the

shorter distances, car use may be the only viable commuting option unless appropriate public transport is available between nearby areas, rather than focussed on the city centre. Figure 1 reveals the regional variations in self-containment across the country, highlighting the extent to which the larger size of SA4s in rural and remote regions (in particular the remote areas of both the NT and WA) contributes to higher rates of self-containment than in the major urban areas. In the capital cities, the concentration of jobs in the CBDs is reflected in lower self-containment rates for the surrounding SA4s.

FIGURE 1: SELF-CONTAINMENT OF JOURNEY TO WORK TRIPS BY SA4



Source: ABS Census of Population and Housing, 2016

Table 2 shows that the proportion of workers who live and work in the same SA4 has decreased since 2011 for most Australian cities. Adelaide, the Australian Capital Territory and Sydney report the three largest declines in self-containment with Darwin returning a small increase. In Sydney the lowest rate of self-containment occurs in Sydney-Inner West, with just 26% living and working in the same SA4. For Melbourne, the lowest rate is in Melbourne – Inner East (35%). Comparatively low rates of self-containment are also found in Brisbane – West (31%), Adelaide - West (49%) and Perth - North East (41%).

TABLE 2: CHANGE IN SELF-CONTAINMENT (SA4) BY GCCSA (2011 & 2016)

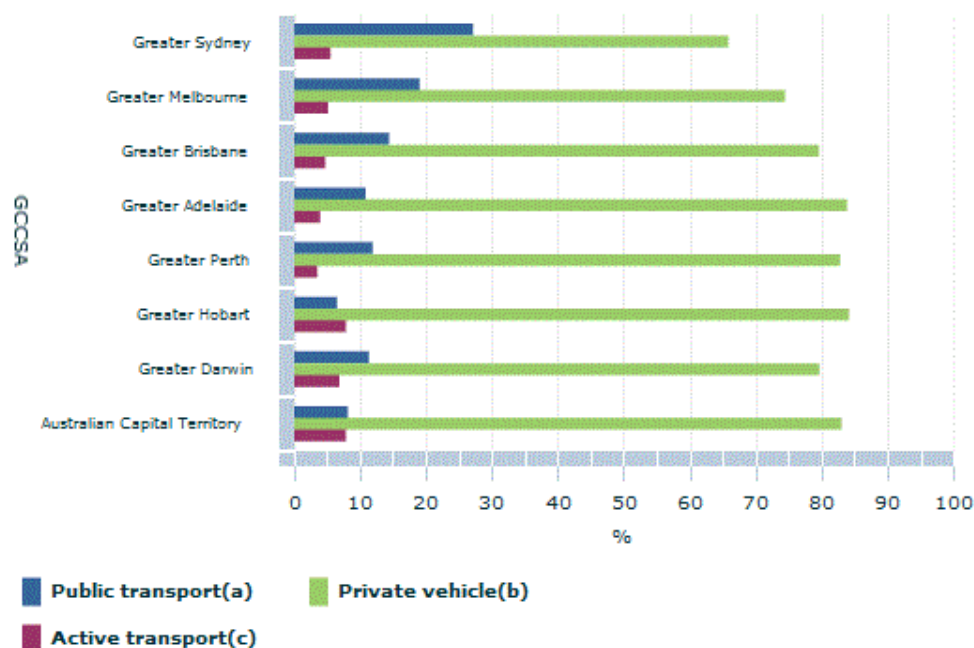
GCCSA	2011	2016	Difference
Greater Sydney	44.1%	43.4%	-0.7
Greater Melbourne	51.8%	51.8%	0.0
Greater Brisbane	47.6%	46.9%	-0.7
Greater Adelaide	56.0%	54.9%	-1.1
Greater Perth	52.6%	52.5%	-0.1
Greater Hobart	97.5%	97.1%	-0.4
Greater Darwin	96.1%	96.5%	0.4
Australian Capital Territory	96.7%	96.2%	-0.5

Source: ABS Census of Population and Housing, 2011 and 2016

4. HOW PEOPLE COMMUTE?

Of the 9.2 million commuters on Census day, 79% travelled to work by private vehicle, 14% took public transport and 5.2% either cycled or walked. In addition to those who commuted on Census day, a further 0.5 million people worked at home and 1 million employed persons did not go to work on Census day. The strong preference towards private vehicles to journey to work echoes similar patterns observed in other Organisation for Economic Co-operation and Development (OECD) nations, given that this mode of travel offers greater accessibility, flexibility and convenience relative to other modes. These proportions have changed little since 2011, except in New South Wales and Victoria where public transport usage has increased and car use has declined slightly.

Figure 2a - Share of commuting by mode of transport for greater capital city, 2016(a)(b)(c)



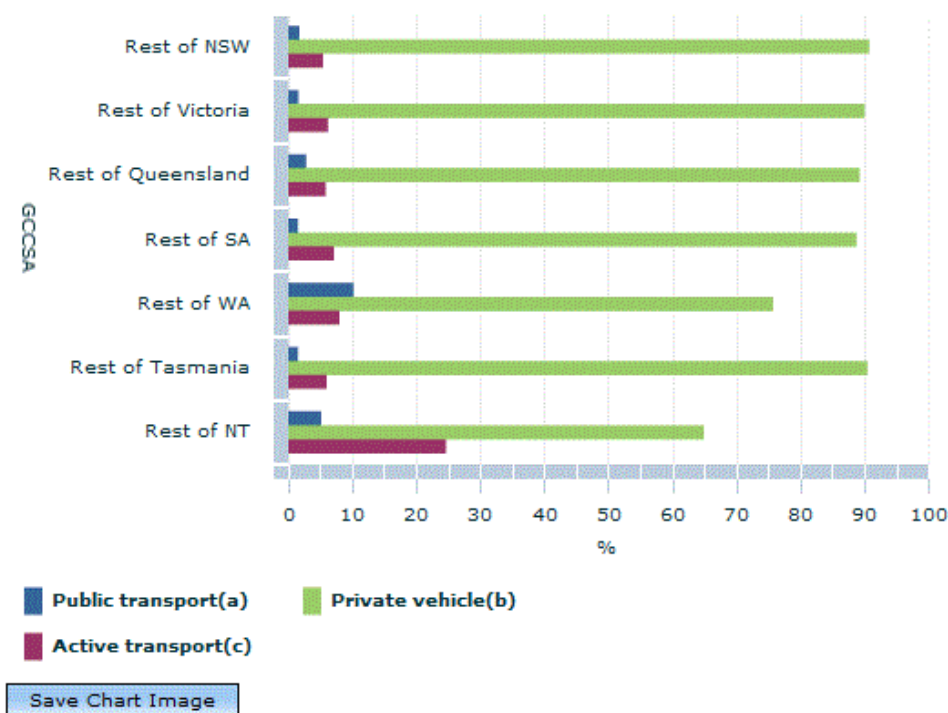
Australian Bureau of Statistics

© Commonwealth of Australia 2018.

Footnote(s): (a) Public transport includes all journey to work trips that used a public bus, train, ferry, tram or taxi. (b) Private vehicle includes journey to work trips that used a private vehicle as a driver and/or passenger. (c) Active transport includes all journey to work trips that were completed by walking or cycling.

Source(s): ABS Census of Population and Housing, 2016

Figure 2b - Share of commuting by mode of transport for rest of state, 2016(a)(b)(c)



Australian Bureau of Statistics

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Footnote(s): (a) Public transport includes all journey to work trips that used a public bus, train, ferry, tram or taxi. (b) Private vehicle includes journey trips that used a private vehicle as a driver and/or passengers. (c) Active transport includes all journey to work trips that were completed by walking or cycling.

Source(s): ABS Census of Population and Housing, 2016

Public transport usage is highest for those working in Sydney (27% of commuters) and Melbourne (19% of commuters), while around 80% of commuters used private vehicles to get to work in Brisbane (80%), Hobart (84%), Adelaide (84%), the Australian Capital Territory (83%) and Perth (83%). Across the country, more than 85% of those commuting by car did not share with other commuters.

5. PATTERNS OF COMMUTING

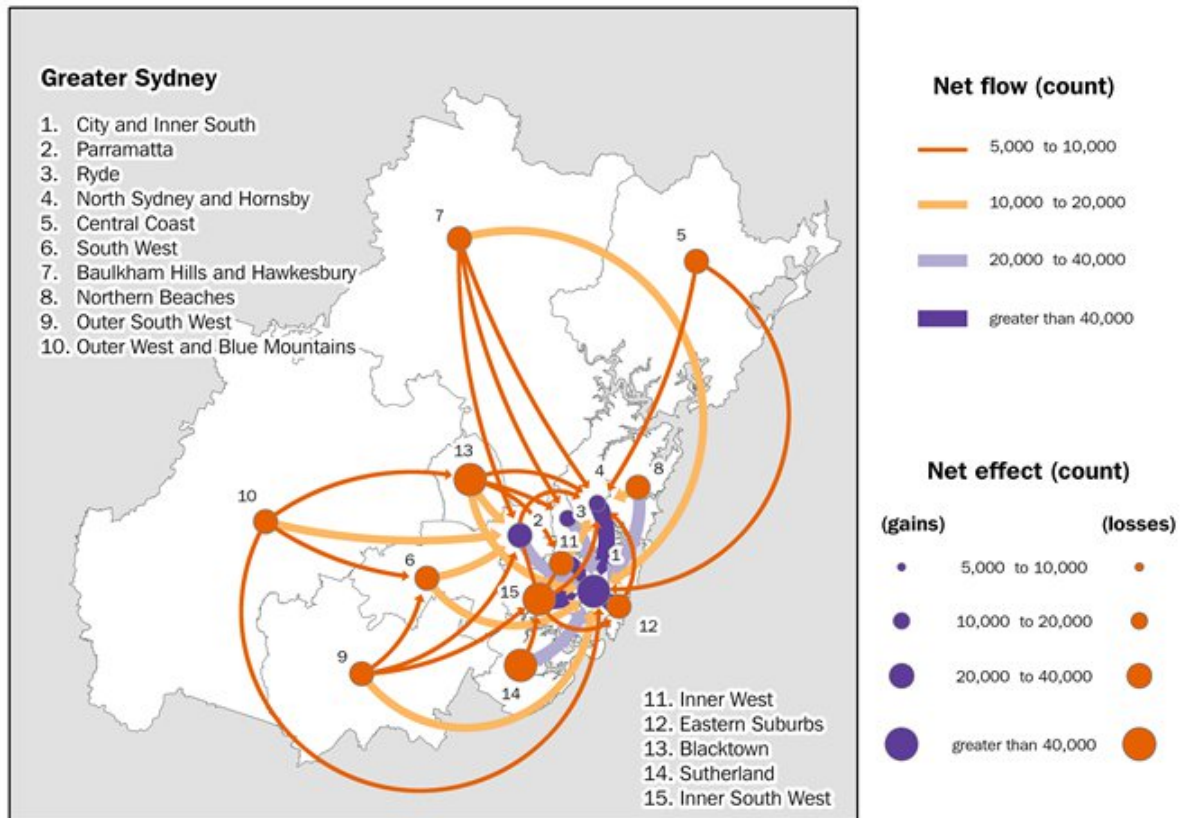
The journey to work reflects the changing patterns of human settlement and in doing so comments on the extent to which home and work are geographically mismatched. Increased commuting distances are often associated with increased commuting times that hold important societal and individual impacts including congestion, air pollution, and implications for quality of life. Mapping the flows of commuters across Australia's cities and regions reveals a number of important interactions between locations of residence and locales of work.

Sydney

The SA4 of City and Inner South contains 26% of all employment in Greater Sydney, so it is not surprising that Figure 3 shows a predominance of commuting flows into this SA4. Although 20% of those employed persons are residents of the SA4, substantial flows also can be seen originating from the Eastern Suburbs, Inner South West, Inner West and North Sydney and Hornsby. About a third of the employment in City and Inner South is held by commuters from outside this group of SA4s, with Parramatta, Sutherland and Northern Beaches each contributing over 25,000 commuters to the city.

Residents of Blacktown account for less than half of the 100,000 persons employed in that SA4. Conversely, around 100,000 residents regularly commute to jobs outside of the SA4, giving rise to a net loss of over 40,000 employed persons as shown in Figure 3.

FIGURE 3: NET FLOW AND NET EFFECT FOR SA4s IN GREATER SYDNEY, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

The flow map also shows substantial net losses for Sutherland, from which 27,000 residents commute into City and Inner South and 14,000 commute to Inner South West. However, almost 70% of the employment in this SA4 consists of residents. That contrasts with Inner South West, where only 53% of the employment is retained by local residents, two thirds of whom commute to jobs outside the SA4, mainly to City and Inner South, Parramatta and Inner West, leading to a large daily loss of employed residents as shown on the map.

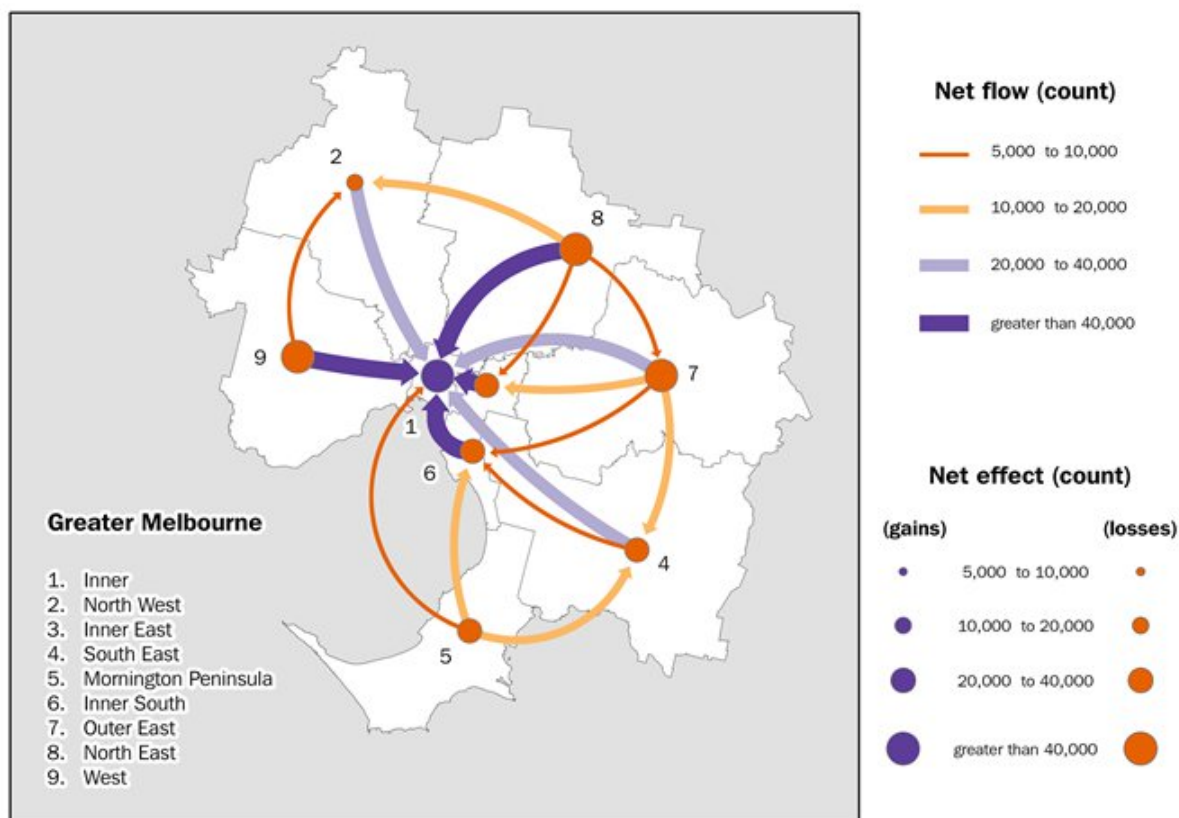
To examine commuting flows in Sydney at a finer SA2 geography, see Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Melbourne

Employment in Melbourne is the most centralised of the three eastern State capitals, with 34% of all employment in Greater Melbourne located in the SA4 of Inner. As Figure 4 shows, West, Inner South, Inner East and Melbourne - North East contribute the majority of commuters to this SA4, although residents of the SA4 account for around one third of all employment.

Some 100,000 commuters travel daily from West to Inner, with a further 24,000 travelling to North West. Despite gaining 16,000 commuters from that SA4 in return, and with almost 160,000 residents both living and working in the SA4, West experiences a net outflow of over 90,000 employed persons every work day.

FIGURE 4: NET FLOW AND NET EFFECT FOR SA4s IN GREATER MELBOURNE, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

Figure 4 also shows substantial net losses of workers for North East (over 75,000) and Outer East (61,000). Approximately 49,000 commuters travel from South East to Inner, but this SA4 also gains commuters from Outer East (33,000) and Mornington Peninsula (22,000), reducing its daily net loss through commuting to under 40,000 as depicted in Figure 4.

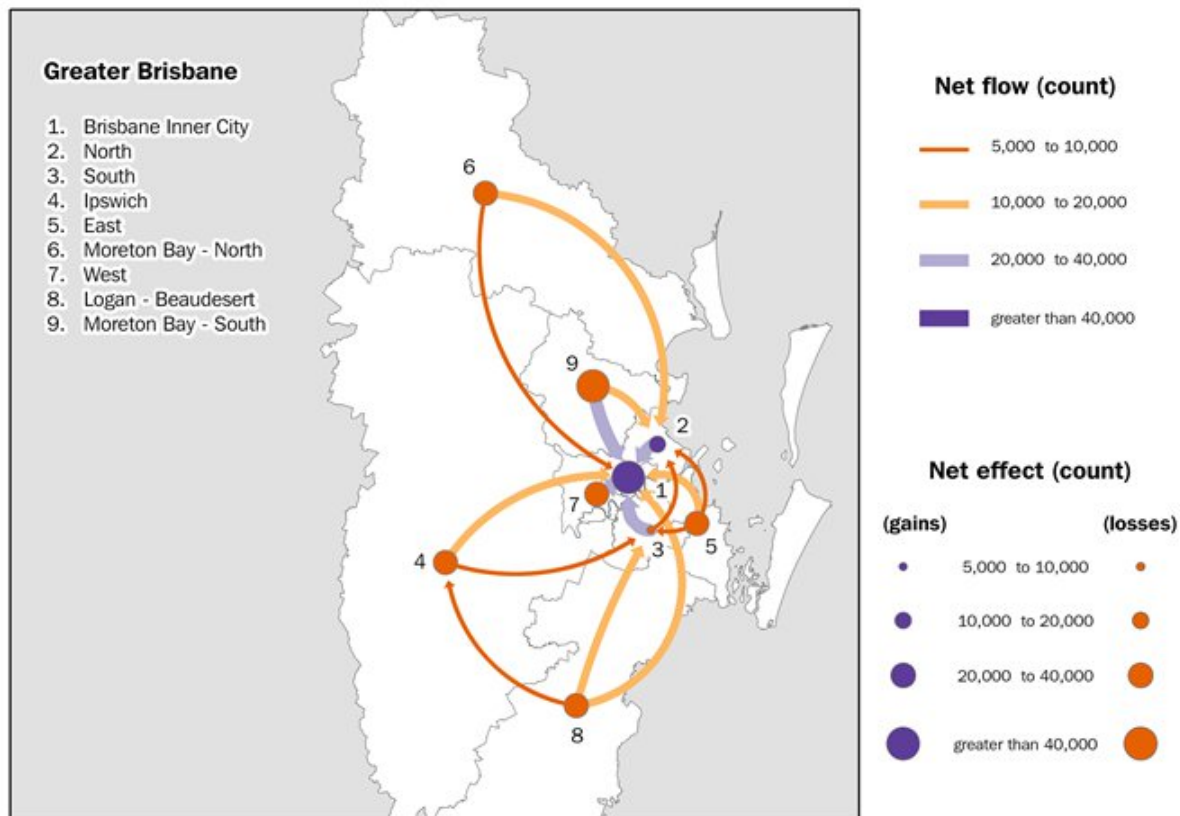
To examine commuting flows in Melbourne at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Brisbane

A total of 30% of the 1 million people who are employed in Greater Brisbane work in Inner City. Residents of that SA4 account for 29% of the local employment. About 25% of those employed in Inner City commute from outside Brisbane, primarily residents of Moreton Bay – South (7%), Ipswich (5%) and Logan – Beaudesert (5%). Commuters from the Gold Coast and Sunshine Coast account for only about 4% of all journeys to work to Inner City.

Within Brisbane, Figure 5 illustrates the largest daily commuting flows to the inner city originating from South (over 50,000), North (36,000) and West (34,000). Despite its contribution of commuters to Brisbane - Inner City, North has a small net gain of commuters overall, as it receives almost 11,000 commuters from Inner City as well as 20,000 from Moreton Bay – South and 13,000 from Moreton Bay – North. Moreton Bay – South loses a large numbers of commuters to both Brisbane - Inner City and Brisbane – North and has a low rate of self-containment at 31%, contributing to a net loss of over 40,000 commuters every work day as identified in Figure 5.

FIGURE 5: NET FLOW AND NET EFFECT FOR SA4s IN GREATER BRISBANE, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

To examine commuting flows in Brisbane at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Adelaide

Greater Adelaide contains only four SA4s, with the city area combined with the Adelaide Hills region, so in Figure 6 the flows appear not to be as centralised as in the other capitals. However, the SA4 of Central and Hills contains 38% of all employment in Greater Adelaide and 42% of those workers are resident in the same SA4. Only a little over 2% of the 215,000 workers employed in Central and Hills originate in SA4s outside of North (20%), South (20%) and West (15%). Figure 6 clearly shows the substantial net losses of commuters which both North and South experience to Central and Hills and West. The latter SA4 received a net gain of workers overall, despite having the lowest proportion of residents working in the SA4 in which they live out of any of Adelaide's four SA4s. Approximately 43,000 workers commute each day from each of North and South to Central and Hills.

FIGURE 6: NET FLOW AND NET EFFECT FOR SA4s IN GREATER ADELAIDE, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

To examine commuting flows in Adelaide at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Perth

Of the 850,000 people whose employment is in Greater Perth, 27% work in the SA4 of Inner. As the Perth flow map shows (Figure 7), the SA4 of North West contributes the greatest proportion of commuters to these jobs, with almost 66,000 residents making that commute daily. South East (19%), South West (14%) and North East (11%) also supply substantial numbers of the commuters who work in Inner, while residents account for 25% of the employment in this SA4.

North West also contributes commuters to work in South East and North East (both over 20,000). Almost 50% of employed residents of North West work in that SA4, but it still experiences a large net loss of commuters as shown in the Perth flow map (Figure 7).

FIGURE 7: NET FLOW AND NET EFFECT FOR SA4s IN GREATER PERTH, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

Over 20,000 of the employed residents of Mandurah work in that SA4, but it experiences a loss of a little over 5,000 commuters to South West and 2,000 to South East each day.

Although the SA4, Inner is the location of work for more than a quarter of all employed persons in Greater Perth, more than 25,000 (almost one third) of its employed residents travelled outside the SA4 for employment, with the dominant destinations being North West and South East. These two SA4s each receive about 8,000 commuters per day from Inner, but those flows are overwhelmed by commutes in the opposite direction.

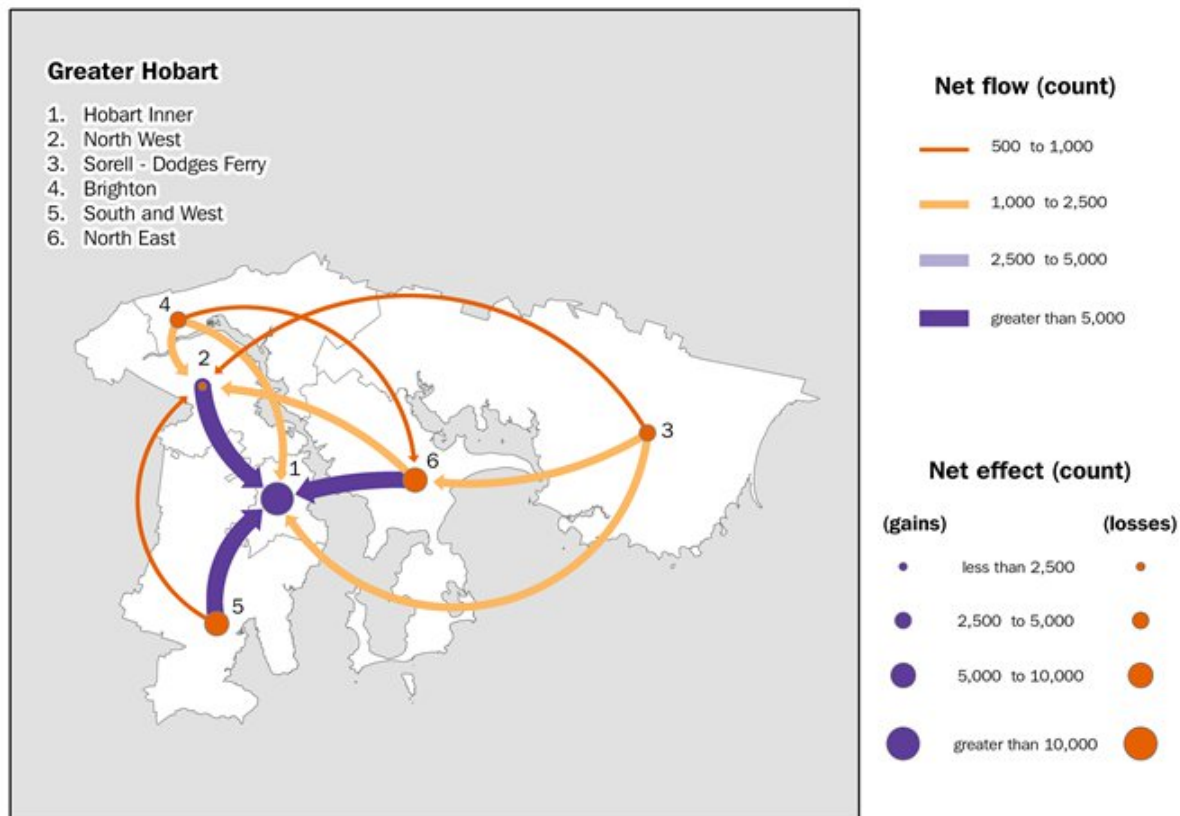
To examine commuting flows in Perth at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Hobart

As there is only a single SA4 in Greater Hobart, Figure 8 displays the major flows and net effects of commuting at SA3 level. Approximately 50,000 employed persons work in the Inner SA3, about half of all employment in Greater Hobart. Just over one third are residents of the SA3, with substantial flows of commuters coming from North East (20%), North West (16%) and South and West (14%). Commuters originating in Brighton and Sorell - Dodges Ferry together account for about 8% of trips to work into Inner.

North West is the recipient of commuter flows from across Greater Hobart, with the most significant sources being North East, Hobart Inner and Brighton. As a result, it experiences only a small net loss of employed persons through daily commuting, unlike Hobart - South and West and Hobart - North East which each experience net losses of over 5,000 employed persons every work day.

FIGURE 8: NET FLOW AND NET EFFECT FOR SA3s IN GREATER HOBART, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

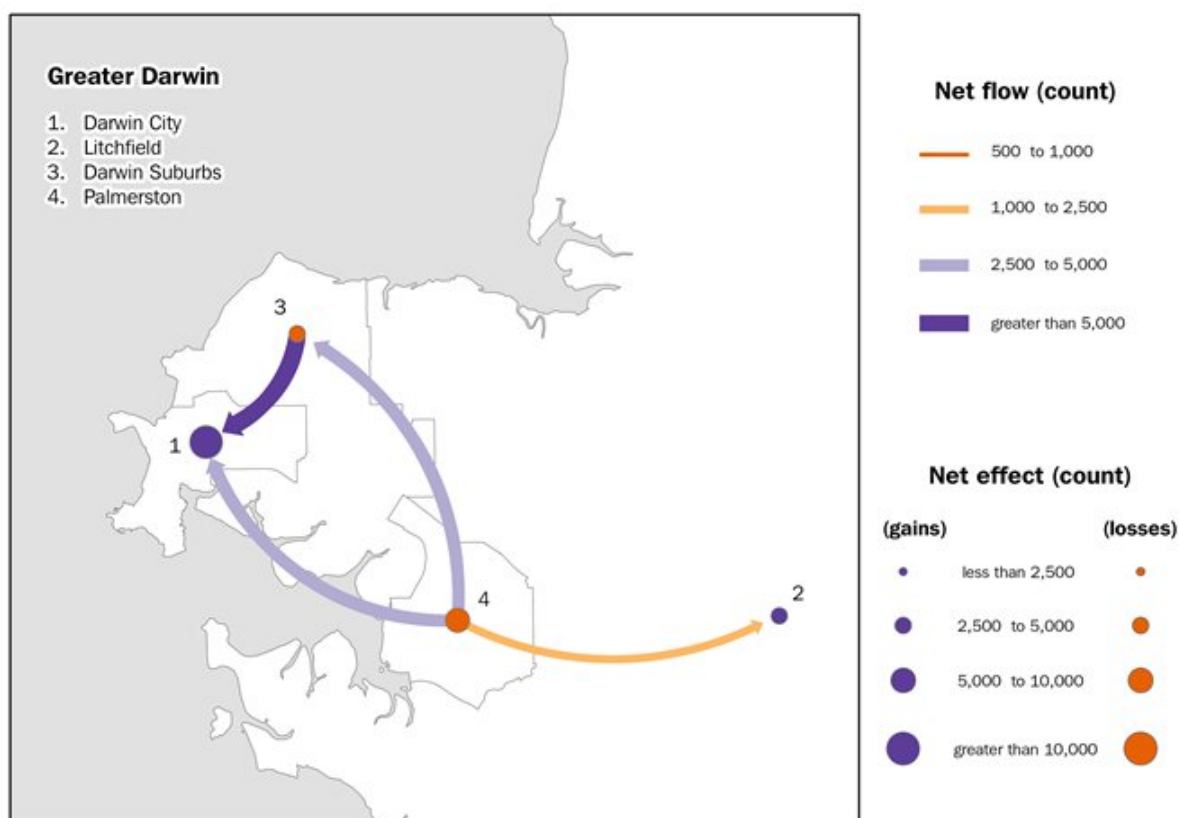
The Hobart flow map (Figure 8) shows that smaller net losses are experienced by Brighton and Sorell - Dodges Ferry, although these losses of around 4,000 commuters each exceed 50% of their respective resident workforces.

To examine commuting flows in Hobart at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Darwin

As there is only a single SA4 in Greater Darwin, Figure 9 displays the major commuting flows and net effects at SA3 level. Of the 72,000 people working in Greater Darwin, 38% work in Darwin City and 31% in the SA3 of Darwin Suburbs. Darwin is somewhat unique, in that about 7% of total employment (almost 5,000 persons) is retained by persons who consider their usual residence to be outside of the Northern Territory. Over 60% of those are persons employed in Litchfield, which is home to Darwin's International Airport and the Robertson Barracks.

FIGURE 9: NET FLOW AND NET EFFECT FOR SA3s IN GREATER DARWIN, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

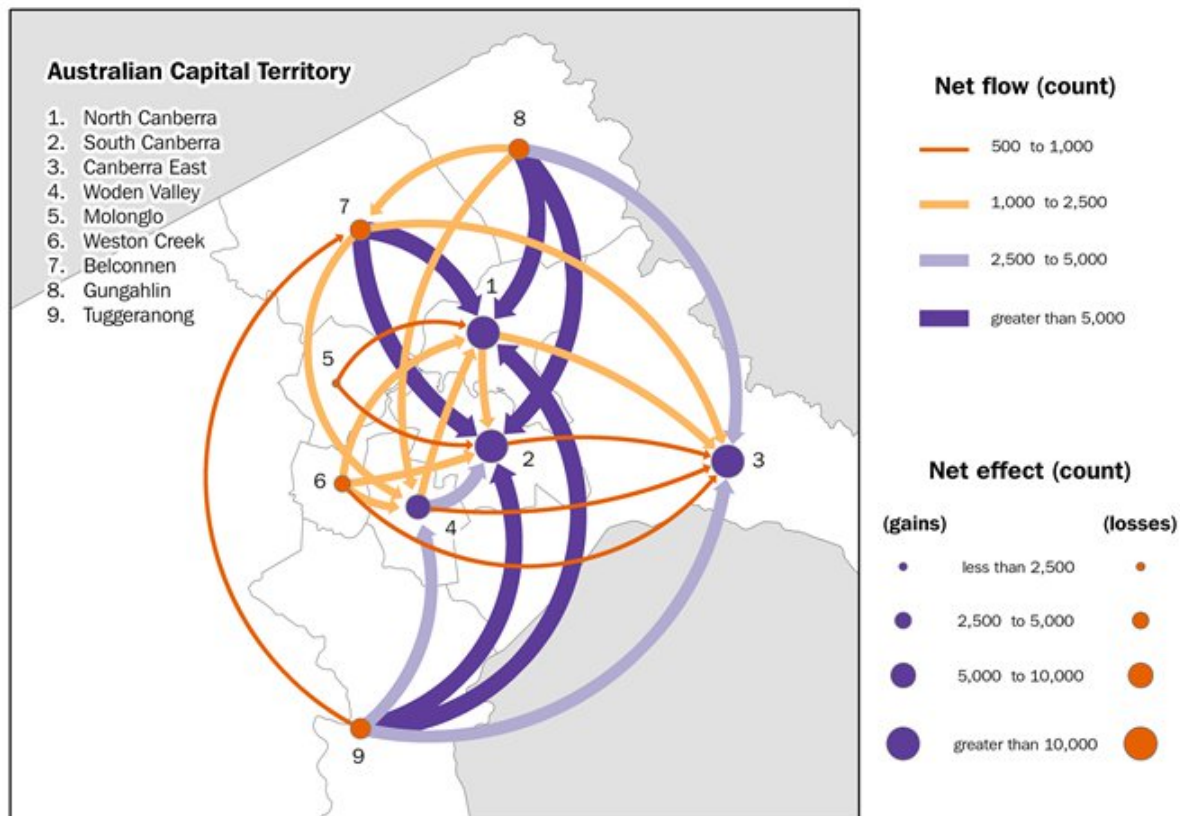
Of the residents of Greater Darwin working in Darwin City, almost 10,000 (38%) commute from Darwin Suburbs and 5,000 (19%) from Palmerston, while about one third reside in the SA3. Of the residents of Greater Darwin who work in Darwin Suburbs, 58% are local residents of the SA3, with Palmerston again providing about 19% of commuters to Darwin Suburbs and 14% originating in Darwin City. These flows result in a net gain of employed persons each day in Darwin City but a small net loss for Darwin Suburbs, as shown in the Darwin flow map (Figure 9). The flow map also clearly shows the net loss of employed persons through daily commuting that occurs in Palmerston.

To examine commuting flows in Darwin at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

Australian Capital Territory

As there is only a single SA4 in the ACT, Figure 10 displays the major flows and net effects at SA3 level. Of the more than 220,000 people working in the ACT, some 13% (29,000) are non-residents of the ACT. Of these, almost 60% work in North Canberra and South Canberra, which are the two largest centres of employment in the ACT accounting for 31% and 22% of total employment respectively.

FIGURE 10: NET FLOW AND NET EFFECT FOR SA3s IN GREATER AUSTRALIAN CAPITAL TERRITORY, 2016(a)



(a) See Downloads tab at the top of this page for a larger version of this map.
Source: ABS Census of Population and Housing, 2016

These two SA3s draw commuters from all over the ACT, as can be seen in the ACT flow map (Figure 10). The major origins of commuters for both of these SA3s are Belconnen, Gungahlin and Tuggeranong. Of the almost 60,000 ACT residents employed in North Canberra, 23% commute from Belconnen, 20% from Gungahlin and 13% from Tuggeranong. However, the largest number of those employed in North Canberra reside in that SA3 (15,000 or 26%).

Only 16% of the employment in South Canberra is retained by residents of the SA3, with 19% commuting from Belconnen, 15% from Gungahlin and 21% from Tuggeranong. Canberra East also attracts commuters from all over the ACT, but in lesser numbers than the two SA3s previously discussed.

Belconnen, Gungahlin and Tuggeranong experience substantial net losses of employed persons as a result of commuter flows, while North Canberra and South Canberra experience large gains. In addition to almost 3,500 people employed in Canberra East who live outside the ACT (mainly in Queanbeyan and Karabar), this SA3 gains almost 11,000 commuters daily from within the ACT, as it is the employment location for almost 15,000 workers but has only just over 500 employed residents.

To examine commuting flows in the ACT at a finer SA2 geography, see: Interactive Maps - Journey to work: Journey to Work from Place of Usual Residence, and Journey to Work to Place of Work.

EXPLANATORY INFORMATION

Self-containment is when a person's place of work was in the SA4 as their place of usual residence.

It is important to note that comparisons of self-containment at SA4 level between cities are affected by the number and size of the SA4s that they contain. In particular, Hobart, Darwin and the Australian Capital Territory each contain a single SA4 as defined by their GCCSA boundaries.

Data for commuting modes presented in this article reflect only the journey to work, not travel for other purposes.

In this article, 'commuters' are employed people excluding those who worked at home or had no fixed place of work on Census day. The sections on Self-Containment and Patterns of Commuting are based on employed people, excluding those with non-spatial geographies and data coded to no fixed workplace address or no usual address.

Net flows are the total inflow minus the total outflow between two specified regions. Net effect is the sum of net flows from a location to all other regions, or in other words, the total of all inflows minus the total of all outflows for a single region.

See the Australian Statistical Geography Standard (ASGS) for more information on the levels of geography that have been used in this article – SA2, SA3, SA4 and GCCSA.

FOOTNOTES

1. New Zealand Household Travel Survey: Travel to work, by main urban area results (3-year moving average). Stats New Zealand. Accessed from < <http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7432>> on 16 May 2018.
2. 2011 Census Analysis - Distance Travelled to Work. Office for National Statistics. United Kingdom: Accessed from <<http://webarchive.nationalarchives.gov.uk/20160105224314/http://www.ons.gov.uk/ons/rel/census/2011-census-analysis/distance-travelled-to-work/2011-census-analysis---distance-travelled-to-work.html>> on 16 May 2018.
3. Transport and Mobility 2016. Statistics Netherlands, The Hague/Heerlen/Bonaire, 2016. Accessed from <https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwiolcix7rDaAhWLx7wKHR0oDjMQFgg3MAE&url=https%3A%2F%2Fwww.cbs.nl%2F-%2Fmedia%2F_pdf%2F2016%2F38%2F2016-transport-and-mobility.pdf&usg=AOvVaw2s9_yrKde-GRCBX3g-ibo5> on 16 May 2018.

Interactive Maps - Journey to Work

INTERACTIVE MAPS

JOURNEY TO WORK

The following pages contain interactive maps that allow users to explore the journey to work of Australians between Statistical Area Level 2 (SA2s).

The two maps included are:

- **Journey to Work from Place of Usual Residence**
- **Journey to Work to Place of Work**

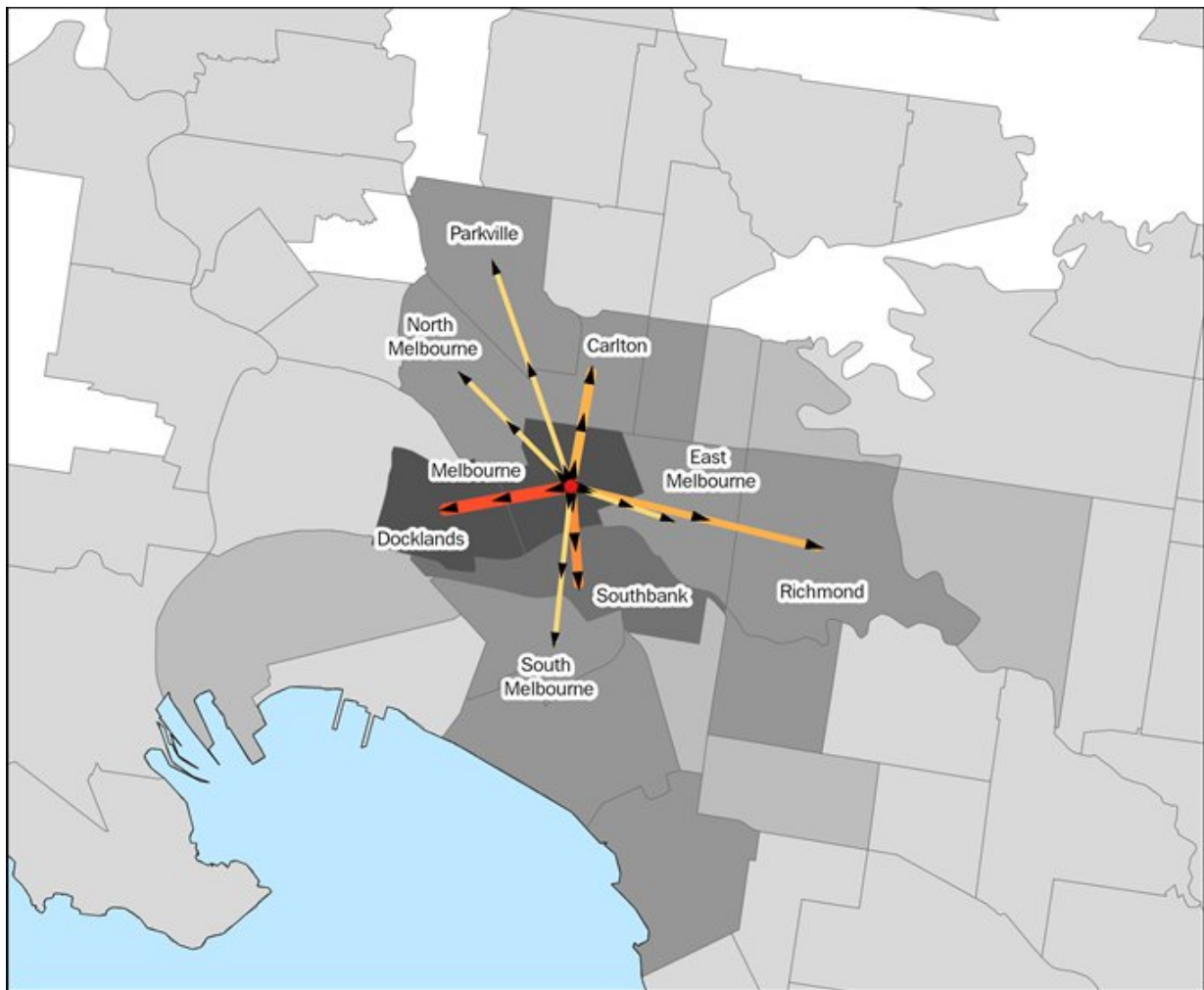
A different picture of the journey to work emerges depending on which way we look at the origin and destination of workers. The journey to work between communities (such as SA2s) will generally differ depending on if we look through the lens of people who live in that area (Place of Usual Residence) and people who work in that area (Place of Work). Two separate maps were produced to allow users to view the journey to work from Place of Usual Residence and to Place of Work.

For comparison, Map 1 and 2 illustrate examples of the flow of commutes based on where people live (Place of Usual Residence) and where people work (Place of Work) respectively.

Information about the geographic areas used in the maps is available on the Australian Statistical Geography Standard (ASGS) page.

The underlying data used to create the interactive maps are available in ABS TableBuilder Basic & Pro, and additional user notes can be found in the **Explanatory Notes** tab

MAP 1 - FLOW OF COMMUTES FROM USUAL RESIDENCE – Melbourne, SA2s, 2016



**Where Melbourne residents travel to for work
(ranking based on total counts of employed persons)**

- | | |
|---|--|
| █ 1 Melbourne | █ 6 No fixed address |
| █ 2 Docklands | █ 7 South Melbourne |
| █ 3 Southbank | █ 8 Parkville |
| █ 4 Richmond | █ 9 East Melbourne |
| █ 5 Carlton | █ 10 North Melbourne |

**Proportion of commutes
to Melbourne (%)**

- | |
|---|
| █ less than 0.5 |
| █ 0.5 to less than 1.0 |
| █ 1.0 to less than 2.5 |
| █ 2.5 to less than 5.0 |
| █ 5.0 to 100.0 |

Source(s): ABS Census of Population and Housing, 2016

MAP 2 - FLOW OF COMMUTES TO PLACE OF WORK – Melbourne, SA2s, 2016



**Where the Melbourne work force is drawn from
(ranking based on total counts of employed persons)**

**Proportion of commutes
to Melbourne (%)**

- 1 Melbourne
- 2 Richmond
- 3 Southbank
- 4 Brunswick
- 5 South Yarra - East

- 6 St Kilda
- 7 North Melbourne
- 8 Hawthorn
- 9 Northcote
- 10 Prahran - Windsor

- less than 0.5
- 0.5 to less than 1.0
- 1.0 to less than 2.5
- 2.5 to less than 5.0
- 5.0 to 100.0

Source(s): ABS Census of Population and Housing, 2016

About this Release

Presents data stories and interactive maps on commuting to work based on the 2016 Census of Population and Housing. It also includes data cubes and geopackages.

History of Changes

25/05/2018 Commuting Distance by Personal Characteristics has been updated to replace Maps 1 and 4. Feature Article: Journey to Work in Australia has had a minor change to titles for Figures 8-10. The GeoPackages have been replaced to address metadata issues.

How far do Australians go to get to work? (Media Release)

MEDIA RELEASE

22 May 2018

Embargo: 11:30 am (Canberra Time)

How far do Australians go to get to work?

Men travel longer to get to work than women while miners have the longest average commute of all occupations, according to recently released data from the 2016 Census.

The latest information shows that the average Australian commuting distance to work was 16km.

Gender, occupation, and income level

Within this, males travelled an average of 17.7km and females 14.2km. This coincides with males comprising a larger share of workers in occupations that have longer average travel distances.

“While most occupations averaged journeys under 17.0km,” said Phillip Wise, Director of Census Dissemination, “Technicians and trade workers travelled an average of 18.2km to get to work, Machinery operators travelled 21.1km, and the grand champions of long journeys to work were by people in the mining industry, who averaged 40.3km.

“At the other end, the industry with the shortest average journey to work was Accommodation and food services workers, at 11.4km.”

Mr Wise said the data also showed that, generally, as income rises so does people’s average commuting distances. People with a weekly income of \$2,000-\$2,999 travelled the longest average distance to work (20.0 km), while people with a weekly income of \$1-\$149 had the shortest average distance to work (9.6 km).

Of the 9.2 million commuters on Census day, 79 per cent travelled to work by private vehicle, 14 per cent took public transport and 5.2 per cent either cycled or walked. In addition to those who commuted on Census day, a further 0.5 million reported that they worked from home, and 1 million employed persons did not go to work on that day.

Location, location, location

And while 73 per cent of workers (employed persons over the age of 15 years) commuted a distance of less than 20km to work, people in some parts of the country, and some lines of work, travelled much further than others.

“Australia’s largest capital cities had longer commuting distances than the smaller capitals. Residents in Sydney, Melbourne, and Brisbane all averaged about 15km, while those living in the Australian Capital Territory had the shortest average commutes at 11.7km.”

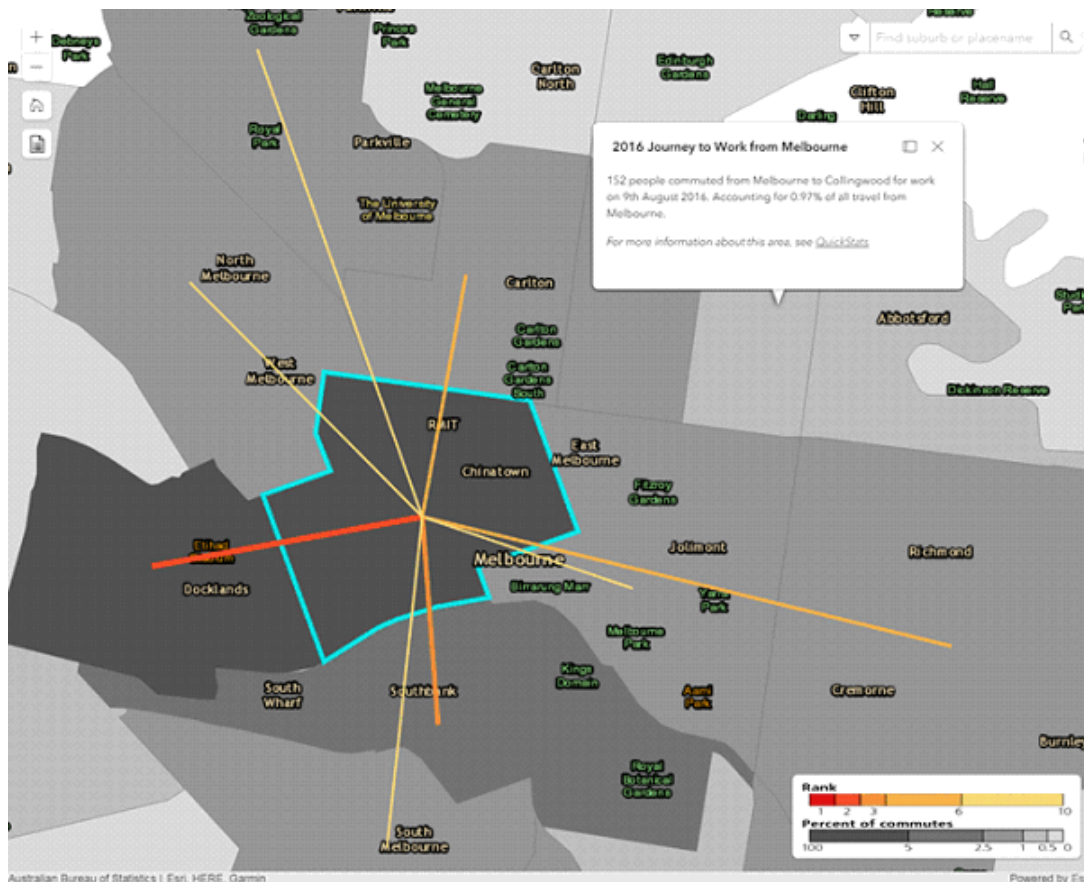
“Workers outside of the state capital cities generally had longer average commutes when compared to their corresponding cities, while commuting distances also tended to increase the further a region was from a central business district or major town hub”, Mr Wise said.

Census data also sheds light on ‘self-containment’, or the proportion of employed persons living and working in the same labour market region (Statistical Area 4 – SA4). For 60% of employed Australians, their workplace was reported to be in the same labour market region as their home, slightly less than in 2011.

Modes of transportation

Public transport usage is highest for those working in Sydney (27 per cent of commuters) and Melbourne (19 per cent of commuters), while around 80 per cent of commuters used private vehicles to get to work in Brisbane (80 per cent), Hobart (84 per cent), Adelaide (84 per cent), the Australian Capital Territory (83 per cent) and Perth (83 per cent).

Four [interactive maps](#) have been created that allow users to explore the commuting distances and journey to work of Australian’s by communities. The following image shows an example of the journey to work interactive map for people living in Melbourne:



More information is available in Census of Population and Housing: Commuting to Work - More Stories from the Census, 2016 (cat. no. 2071.0.55.001) available for free download from the [ABS website](#).

Media notes:

- The collection of address of usual residence and address of place of work in the Census has ensured the ABS can produce this high quality data on the journey to work and release output for a number of different geographic areas.
- When reporting ABS data you must attribute the Australian Bureau of Statistics (or the ABS) as the source.
- Media requests and interviews - contact the ABS Communications Section on 1300 175 070.
- Subscribe to our [media release notification service](#) to be notified of ABS media releases or publications upon their release.

Commuting Distance from Place of Usual Residence

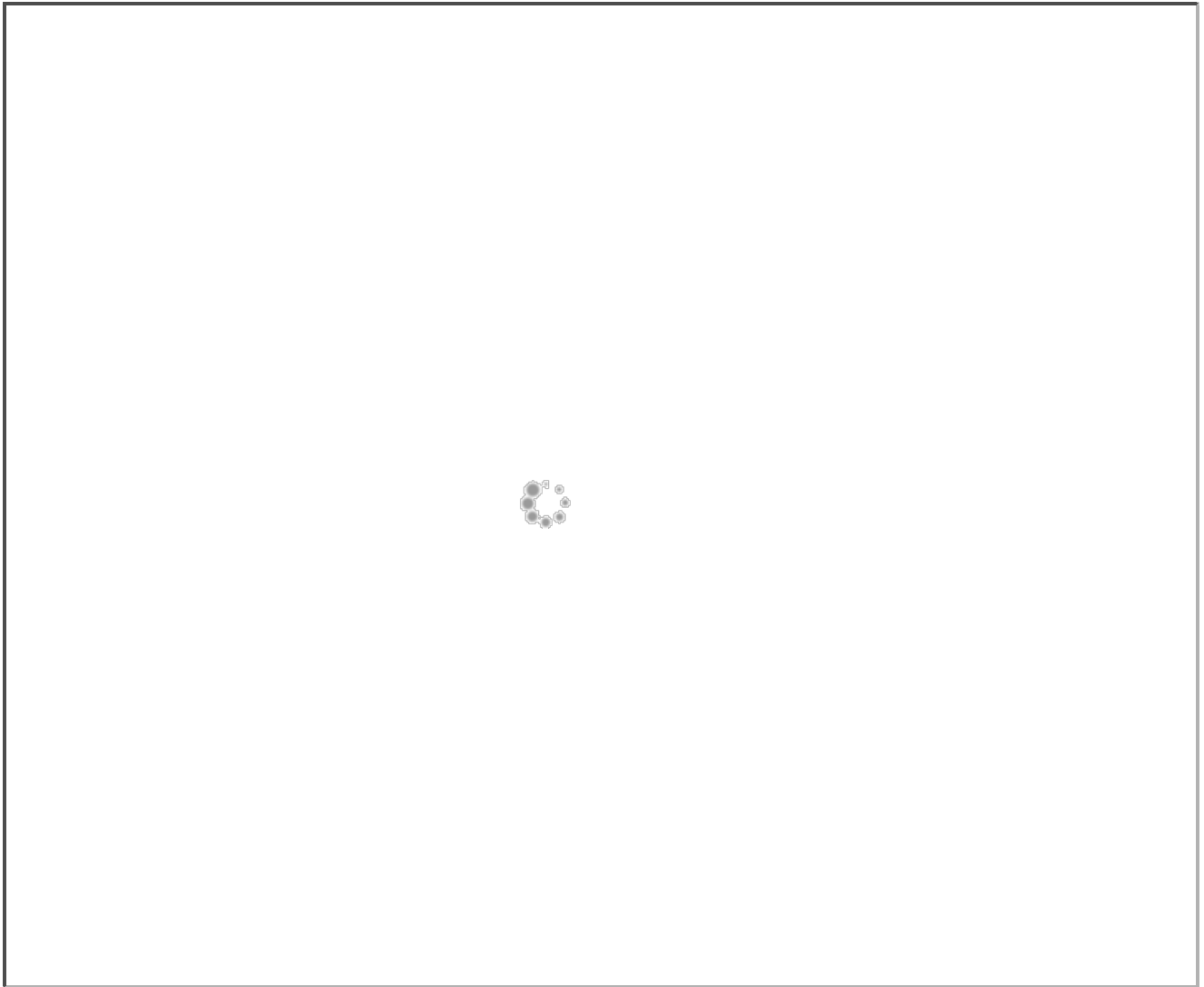
INTERACTIVE MAP

COMMUTING DISTANCE FROM PLACE OF USUAL RESIDENCE

Use the map below to display information on commuting distances based on where people live (Place of Usual Residence) by Statistical Area Level 2 (SA2s).

The search bar at the top of the map can be used to locate a town or postcode. Alternatively, you can use the zoom function to navigate to the location you are interested in and then click on the area for more information.

- If the map below does not load successfully, please try refreshing this page.



By default this map displays average commuting distance from Place of Usual Residence. Users can also explore other data items by changing the selected layer in the drop down box at the top of the map, while the opacity (or transparency) of these layers can be adjusted to view a basemap using the slider at the bottom of the map. More detailed summary statistics can also be viewed by left clicking an SA2 region on the map.

Detailed results are available on the **Downloads tab**.

Commuting Distance to Place of Work

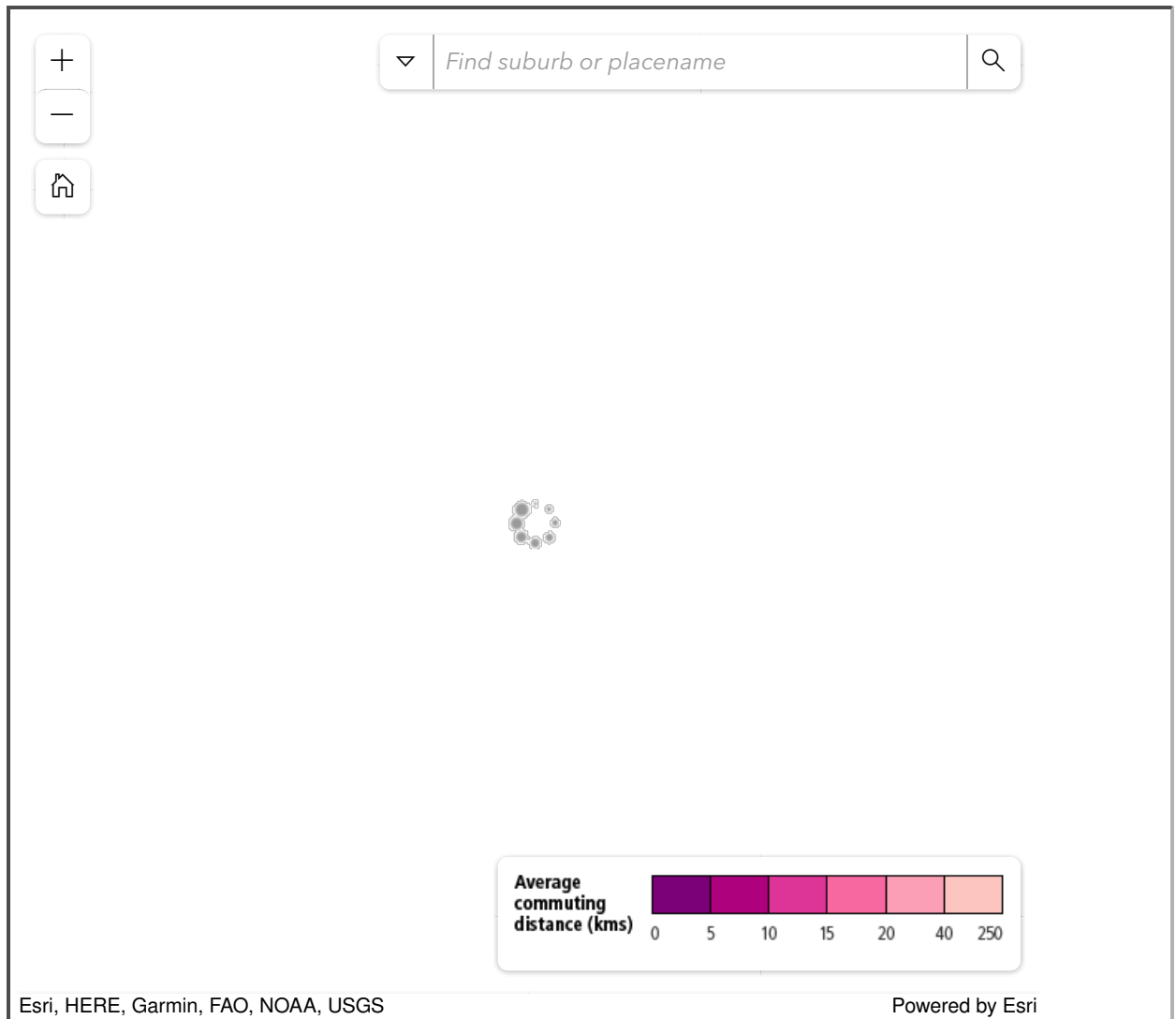
INTERACTIVE MAP

COMMUTING DISTANCE TO PLACE OF WORK

Use the map below to display information on commuting distances based on where people work (Place of Work) by Statistical Area Level 2 (SA2s).

The search bar at the top of the map can be used to locate a town or postcode. Alternatively, you can use the zoom function to navigate to the location you are interested in and then click on the area for more information.

- If the map below does not load successfully, please try refreshing this page.



By default this map displays average commuting distance to Place of Work. Users can also explore other data items by changing the selected layer in the drop down box at the top of the map, while the opacity (or transparency) of these layers can be adjusted to view a basemap using the slider at the bottom of the map. More detailed summary statistics can also be viewed by left clicking an SA2 region on the map.

Detailed results are available on the **Downloads tab**.

Journey to Work from Place of Usual Residence

INTERACTIVE MAP

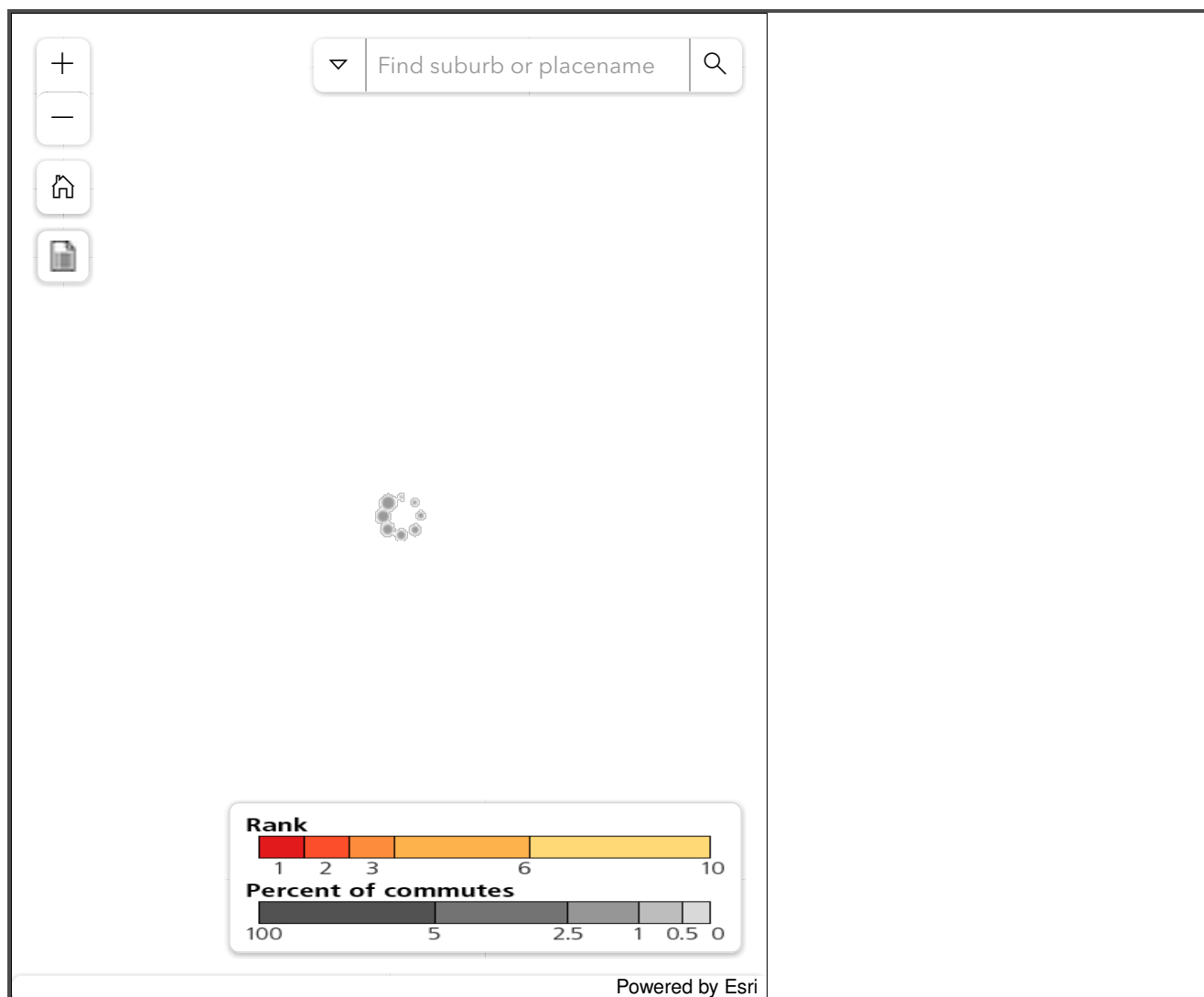
JOURNEY TO WORK FROM PLACE OF USUAL RESIDENCE

Use the map below for more information on the journey to work that occurs between Statistical Area Level 2 (SA2) regions. To get started, use the search bar at the top of the map to search data for a specific town or address related to where people live (Place of Usual Residence).

Once prompted the map will display both lines and a choropleth map (areas are shaded in proportion to the measurement of the statistical variable) representing the numbers of people commuting between

the selected region (Place of Usual Residence) and Places of Work. The lines represent the top commutes, while the choropleth map is generated across regions to provide a more complete picture of the journey to work.

- If the map below does not load successfully, please try refreshing this page.



You can also use the zoom functions to navigate to the location you're looking for and click on the area for more information detailed information on the number and percentage of people commuting.

Detailed results are available in TableBuilder Basic and Pro.

Journey to Work to Place of Work

INTERACTIVE MAP

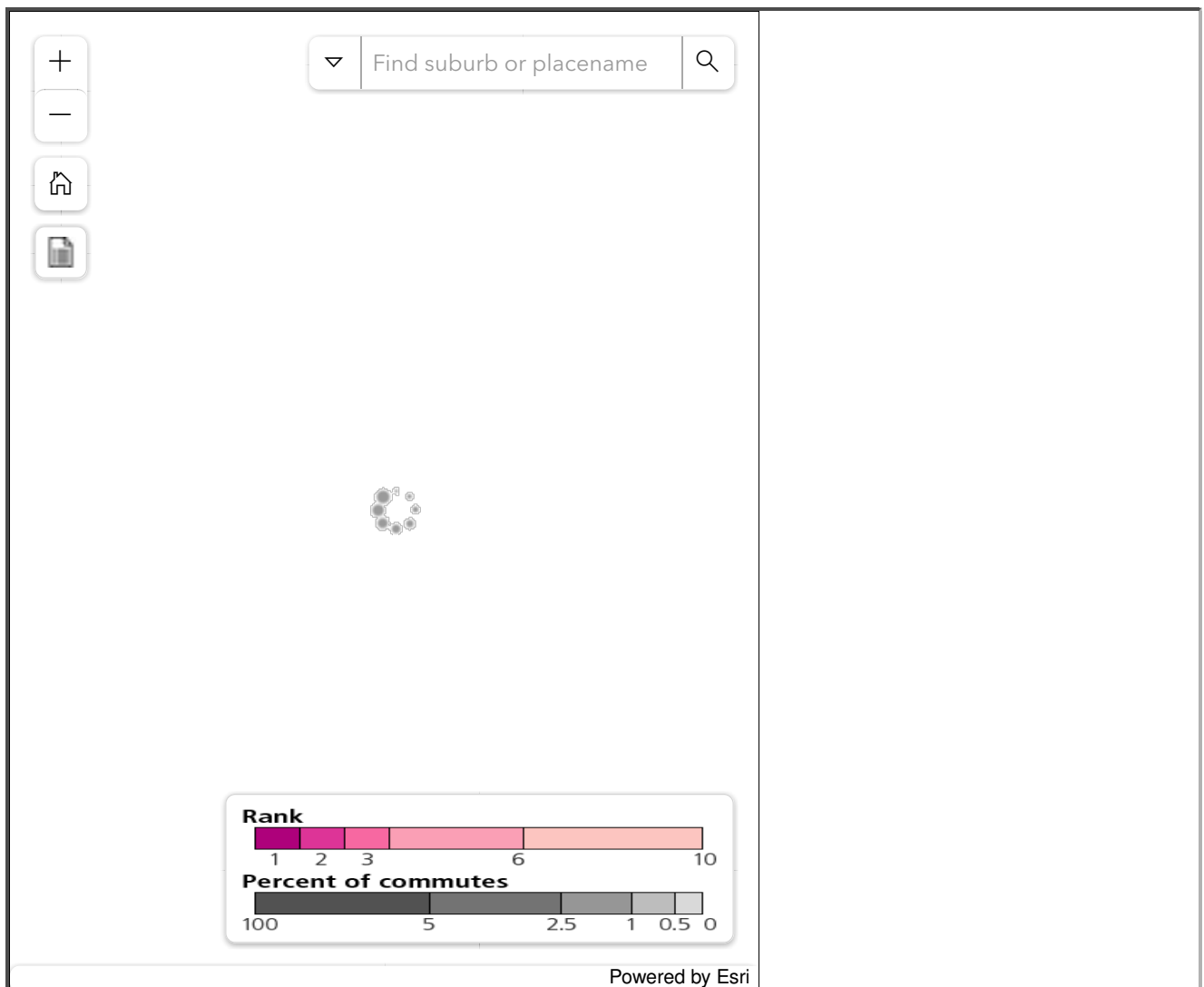
JOURNEY TO WORK TO PLACE OF WORK

Use the map below for more information on the journey to work that occurs between Statistical Area Level 2 (SA2) regions. To get started, use the search bar at the top of the map to search data for a specific town or address related to where people work (Place of Work).

Once prompted the map will display both lines and a choropleth map representing the numbers of

people commuting between the selected region (Place of Work) and Place of Usual Residence. The lines represent the top commutes, while the choropleth map is generated across regions to provide a more complete picture of the journey to work.

- If the map below does not load successfully, please try refreshing this page.



You can also use the zoom functions to navigate to the location you're looking for and click on the area for more information detailed information on the number and percentage of people commuting.

Detailed results are available in TableBuilder Basic and Pro.

Explanatory Notes

Explanatory Notes

EXPLANATORY NOTES

INTRODUCTION

1 This publication, **Census of Population and Housing: Commuting to Work - More Stories from the Census, 2016**, adds to the existing suite of Census products created from the 2016 Census of

Population and Housing. The data and articles presented in this publication provide insight into commuting patterns and behaviours across Australia.

DISTANCE TO WORK

2 The Distance to Work data, or commuting distance, provides a measurement of the distance travelled between a person's Mesh Block of Place of Usual Residence and Mesh Block of Place of Work. An assumption in the calculation of this data is that a person has followed the shortest path with no stops when commuting to work. Detailed information on the how commuting distances were calculated can be found on the Understanding the Census and Census Data (cat. no. 2900.0) page.

3 The data is applicable to all persons who stated their labour force status as 'employed'. It excludes persons who were unemployed, not in the labour force or labour force status not stated, as well as overseas visitors and those aged less than 15 years.

Data Cubes

4 The table below provides a summary of all data cubes included in the **Downloads tab**.

COMMUTING DISTANCE DATA CUBES

Data cube number	Data cube name	Attributes	Output geography
1	Commuting Distance from Place of Usual Residence	Number of employed people living in region (no.) Average commuting distance (kilometres) Median commuting distance (kilometres) Interquartile range (kilometres) Standard deviation (kilometres)	National State/Territory Greater Capital City Statistical Area Significant Urban Area Local Government Areas Statistical Area Level 4 Statistical Area Level 3 Statistical Area Level 2
2	Commuting Distance to Place of Work	Number of employed people living in region (no.) Average commuting distance (kilometres) Median commuting distance (kilometres) Interquartile range (kilometres) Standard deviation (kilometres)	National State/Territory Greater Capital City Statistical Area Destination Zones Local Government Areas Statistical Area Level 4 Statistical Area Level 3 Statistical Area Level 2
3	Commuting Distance by Personal Characteristics	Number of employed people living in region (no.) Average commuting distance (kilometres) Median commuting distance (kilometres) Interquartile range (kilometres) Standard deviation (kilometres)	National State/Territory Greater Capital City Statistical Area Statistical Area Level 4

5 The first and second data cubes provide summary data on commuting distances from the lens of people who live in an area (Place of Usual Residence) and people who work in an area (Place of Work) respectively. The data has been presented for various statistical geographies sourced from the Australian Statistical Geography Standard (ASGS).

6 The third data cube provides commuting distance data based on where people live classified against other personal characteristics captured within the 2016 Census of Population and Housing. These include; age, sex, occupation, industry, income, education and mode of transport. The data has been presented for several levels of the ASGS.

7 Users of the data cubes should note:

- People who commuted 250 kilometres or more are excluded from the statistics.
- Persons who were coded to Special Purpose Codes are excluded from the statistics. Non-spatial geographies (e.g. Migratory - Offshore - Shipping) are excluded from the data cubes as commuting distances were not calculated for these areas.
- Nil distances have been included in the calculations of average commuting distance, median commuting distance, Interquartile range and standard deviation. Information on nil distances can be found on the Understanding the Census and Census Data (cat. no. 2900.0) page.

8 Other data usage notes:

- The Mode of Travel to Work (MTW06P, MTW15P) is a variable derived from the Census item Method of Travel to Work (MTWP) which records the method used to travel to work on the day of the Census.
- Place of Work and Method of Travel to Work are collected on the Census form but represent different reference periods. The Place of Work represents the address of the main job held the last week before the day of the Census, while Method of Travel to Work represents how the person travelled to work on the day of the Census. As a result, in some cases a distance between a person's Mesh Block of Place of Usual Residence and Mesh Block of Place of Work has been reported for Mode of Travel to Work such as 'Worked at home' or 'Did not go to Work' where the Mesh Block of Place of Usual Residence and Mesh Block of Place of Work was not the same.
- The distance recorded for persons who were away from their Place of Usual Residence on Census night may not be indicative of their typical journey to work. For example, a fly-in, fly-out worker may have recorded their Place of Usual Residence in Sydney but their main job held the last week before the day of the Census (Place of Work) was in Western Australia. In these cases, a large distance would be recorded. Distances greater than 250 kilometres have been excluded from the statistics presented in the data cubes.
- The data is a measurement between the centre point (or centroid) of the Mesh Block of Place of Usual Residence and Mesh Block of Place of Work, noting that the location of the centroid in the Mesh Block was weighted based on the location of residential and commercial addresses respectively. A consequence of measuring distance between the weighted centroid of a person's Mesh Block of Place of Usual Residence and Mesh Block of Place of Work is this method can yield a different commuting distance to that which was taken. This limitation is most visible for short journeys such as walking to work.
- The commuting distance data has been measured using a road network or straight line distance, which may not provide an accurate representation of distance for some modes of travel such as walking or rail.
- Each person's Mode of Travel to Work is based on their primary response to the Method of Travel to Work question on the Census form. For example, if their Method of Travel to Work was 'Train, ferry' the Train category would have been used as the Mode of Travel to Work.
- More information can be found on the Understanding the Census and Census Data (cat. no. 2900.0) page.

GeoPackages

9 The data contained in the first and second data cubes have also been presented as Geopackages in the **Downloads tab**.

10 Geopackages are typically suitable for experienced Census data users who have access to a Geographical Information System (GIS). GeoPackages hold and merge (in a database container), data from the 2016 Census DataPacks with boundary data from the ASGS.

11 The field structure of the Geopackages are described in the following table:

GEOPACKAGES FIELD DESCRIPTIONS

Commuting Distance from Place of Usual Residence	
Field name	Description
Geography_Code	Australian Statistical Geography Standard (ASGS) code

Geography_Label	Australian Statistical Geography Standard (ASGS) label
Count	Number of employed people living in region (no.)
Average	Average commuting distance (kilometres)
Median	Median commuting distance (kilometres)
Interquartile_Range	Interquartile range (kilometres)
Std_Dev	Standard deviation (kilometres)

Commuting Distance to Place of Work

Field name	Description
Geography_Code	Australian Statistical Geography Standard (ASGS) code
Geography_Label	Australian Statistical Geography Standard (ASGS) label
Count	Number of employed people working in region (no.)
Average	Average commuting distance (kilometres)
Median	Median commuting distance (kilometres)
Interquartile_Range	Interquartile range (kilometres)
Std_Dev	Standard deviation (kilometres)

12 Users should refer to the footnotes and usage notes related to data cubes before using the Geopackages.

TableBuilder

13 The commuting distance data is available within TableBuilder Basic & Pro, as a variable called Distance to Work. This data has been presented in a hierarchical classification with four levels of distance ranges. Please see the appendix of the Understanding the Census and Census Data (cat. no. 2900.0) page for more details on the classification of these ranges.

JOURNEY TO WORK FEATURE ARTICLE

14 The Journey to Work in Australia feature article has been authored by Jim Cooper and Jonathan Corcoran from the University of Queensland.

15 Self-containment is defined as when a person's Place of Work was in the same Statistical Area Level 4 (SA4) as their Place of Usual Residence.

16 It is important to note that comparisons of self-containment at SA4 level between cities are affected by the number and size of the SA4s that they contain. In particular, Hobart, Darwin and the Australian Capital Territory each contain a single SA4 as defined by their Greater Capital City Statistical Area boundaries.

17 Data for commuting modes presented in this article reflect only the journey to work, not travel for other purposes.

18 In this article, 'commuters' are employed people excluding those who worked at home or had no fixed Place of Work on Census day. The sections on Self-Containment and Patterns of Commuting are based on employed people, excluding those with non-spatial geographies and data coded to no fixed workplace address or no usual address.

19 Net flows are the total inflow minus the total outflow between two specified regions. Net effect is the sum of net flows from a location to all other regions, or in other words, the total of all inflows minus the total of all outflows for a single region.

20 See the ASGS for more information on the levels of geography that have been used in this article.

INTERACTIVE MAPS

21 Four interactive maps have been created to allow users to explore the commuting behaviours and patterns for Australians visually by Statistical Area Level 2 (SA2s). The interactive maps are;

- **Commuting Distance from Place of Usual Residence**
- **Commuting Distance to Place of Work**

- **Journey to Work from Place of Usual Residence**
- **Journey to Work to Place of Work**

22 A different picture of commuting distance and journey to work emerges depending on which way we look at the origin and destination of workers. The commuting distance and journey to work for a community will typically differ depending on if we look through the lens of people who live in that area (Place of Usual Residence) and people who work in that area (Place of Work). Separate maps were produced to allow users to view data from Place of Usual Residence and to Place of Work.

23 The data presented in the commuting distance interactive maps can be found within the first and second data cubes on the **Downloads tab**, while the journey to work data can be viewed from TableBuilder Basic & Pro. Information about the geography used in the maps is available on the ASGS page.

24 Users of the interactive maps should note:

- The commuting distance and journey to work interactive maps have used different input datasets and are not directly comparable.
- The commuting distance interactive maps exclude commutes 250 kilometres or more, persons who were not employed and persons who were coded to Special Purpose Codes, nil distances have been included.
- The journey to work interactive maps excludes persons who were not employed, but have included persons with commutes of 250 kilometres or more. Special Purpose Codes have been included in the statistics, but are omitted in the interactive maps as they relate to non-spatial geographies. For example, Map 1 on the Interactive Maps - Journey to work page lists 'No fixed address' as the sixth most common response from the residents of Melbourne.
- The journey to work maps display both lines and a choropleth map (areas are shaded in proportion to the measurement of the statistical variable) representing the numbers of people commuting between an origin SA2 and destination SA2. The lines represent the most frequent commutes between SA2s, while the choropleth map provides a more complete picture of the journey to work. A filter of 100 SA2s has been applied to the choropleth map to maximise performance.
- Small random adjustments have been made to all cell values to protect the confidentiality of data. These adjustments may cause the sum of rows or columns to differ by small amounts from the table totals.

RELATED RELEASES

25 For more information related to Distance to work, see the data quality statements for Method of Travel to Work and Place of Usual Residence, which can be used in conjunction with the Place of Work variable. These can be found in Understanding the Census and Census Data (cat. no. 2900.0).

26 More analytical articles from the 2016 Census of Population and Housing can be found in Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016 (cat. no 2071.0).

27 For further information about the ASGS please refer to the following publication: Australian Statistical Geography Standard (ASGS): Volume 1 - Mains Structure and Greater Capital City Statistical Areas, July 2016 (cat. no. 1270.0.55.001).

Glossary

GLOSSARY

For a comprehensive definition of terms, see the Census of Population and Housing: Census Dictionary, 2016 (cat. no. 2901.0). For information on distance to work, see Census of Population and Housing: Understanding the Census and Census Data (cat. no. 2900.0).

Active transport

Active transport refers to people whose Mode of Travel to Work on Census day was walked only or bicycle.

Australian Standard Geographical Standard (ASGS)

This publication presents information for a range of geographies defined under the ASGS, including Statistical Level 2 (SA2), Statistical Area Level 3 (SA3), Statistical Level 4 (SA4), Local Government Areas (LGA), Significant Urban Areas (SUA), Destination Zones (DZN) and Greater Capital City Statistical Areas. For more information, see Statistical Geography.

Average commuting distance

The average (mean) distance is the sum of the commuting distances travelled by a group of people divided by the number of people in that group. In this publication, this statistic excludes people who commuted 250 km or more and includes those who commuted nil distance. Average commuting distance can be based on either people's Place of Usual Residence or Place of Work. See the **Explanatory Notes** tab at the top of this page for more information.

Choropleth map

A map where geographic areas are shaded in proportion to the measurement of a statistical variable.

Distance to Work

The Distance to Work, or commuting distance, data provides a measurement of the distance travelled between a person's Mesh Block of Usual Residence and Mesh Block of Place of Work. An assumption in the calculation of this data is that a person has followed the shortest path with no stops when commuting to work. See the **Explanatory Notes** tab at the top of this page for more information.

Employed

For Census purposes, employed people are those aged 15 years and over who:

- work for payment or profit, or as an unpaid helper in a family business, during the week prior to Census night
- have a job from which they are on leave or otherwise temporarily absent, or
- are on strike or stood down temporarily.

Employed people living in region

Employed people living in region (in the Interactive maps and data cubes) refers to the number of employed people living in a region, excluding those who commuted 250 km or more or those with non-spatial geographies.

Employed people working in region

Employed people working in region (in the Interactive maps and data cubes) refers to the number of employed people working in a region, excluding those who commuted 250 km or more or those with non-spatial geographies.

Interquartile range

The interquartile range is the difference between the upper and lower quartiles and describes the middle 50% of values when ordered from lowest to highest. Quartiles divide an ordered dataset into four equal parts and refer to the values of the point between the quarters. The upper quartile is the point between the lowest 75% and highest 25% of values (also called the 75th percentile). The lower quartile is the point between the lowest 25% of values and the highest 75% of values (25th percentile).

In this publication, this statistic excludes people who commuted 250 km or more and includes those who commuted nil distance.

Median commuting distance

This is the level of commuting distance which divides the units in a group into two equal parts, one half having distance above the median and the other half distances below the median. In this publication, this statistic excludes people who commuted 250 km or more and includes those who commuted nil distance.

Mode of travel to work

The Mode of Travel to Work (MTW06P, MTW15P) is a variable derived from the Census item Method of Travel to Work (MTWP) which records the method used to travel to work on the day of the Census. Each commuter is only counted once based on their first response on the Census form, even if they reported multiple modes of transport. For example, if their method of travel to work was 'Train, ferry' they were placed in the count for the Train category but not for the Ferry category.

Net effect

Net effect is the sum of net flows from a location to all other regions, or in other words, the total of all inflows minus the total of all outflows for a single region.

Net flows

Net flows are the total inflow minus the total outflow between two specified regions.

Percent of commutes

Percent of commutes (in the Journey to Work interactive maps) represents the percentage of employed people commuting to or from the selected SA2, for other SA2s on the map.

Place of Usual Residence

This is the place where a person usually lives. It may, or may not be the place where the person was counted on Census night.

Place of Work

Place of Work data provide information on the address of the person's workplace in the week prior to Census night.

Private transport

Private transport refers to people whose mode of travel to work on Census day was car (as driver or passenger), truck or motorbike/scooter.

Public transport

Public transport refers to people whose mode of travel to work on Census day was train, bus, ferry, tram or taxi.

Rank

Rank (in the Journey to Work interactive maps) represents the top commutes associated with the selected SA2.

Self-containment

Self-containment is when a person's place of work was in the same SA4 as their place of usual residence.

Special Purpose Codes

Special Purpose Codes allow address data to be coded to a non-spatial value. This occurs when there is insufficient information to code to a physical geographic area. For example, when someone is in transit on Census night or where an incomplete address has been supplied.

Standard deviation

Standard deviation measures the spread of data around the mean. It summarises how close each observed value is to the mean. Groups with a small spread of values are very close to the mean, resulting in a small standard deviation. Groups with more dispersed values are spread further away from the mean, leading to a larger standard deviation. In this publication, this statistic excludes people who commuted 250 km or more and includes those who commuted nil distance.

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